



STIC Search Report

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STIC Database Tracking Number: 189088

TO: Christine Saoud
Location: rem/4E81/4C70
Art Unit: 1647
Friday, May 12, 2006
Case Serial Number: 10/714067

From: Kristine Hensle
Location: Biotech-Chem Library
REM-1B69
Phone: (571) 272-4161

Kristine.Hensle@uspto.gov

Search Notes

Examiner Saoud,

See attached results.

If you have any questions about this search feel free to contact me at any time.

Thank you for using STIC search services!

Kristine Hensle
Librarian
STIC Biotech/Chem Library
(571)272-4161

703 855 1904

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From: Saoud, Christine
Sent: Monday, May 08, 2006 6:47 AM
To: STIC-Biotech/ChemLib
Subject: sequence search request - 10/714067

RECEIVED
MAY - 8 2006
(STIC)

Please search SEQ ID NO:24 in the patent and commercial databases. No interference/pending search at this time.

This should be a protein search.

Thanks,

Christine Saoud
AU 1647
REM 04 E81
571-272-0891

4C70

Searcher: _____
Searcher Phone: _____
Date Searcher Picked up: _____
Date completed: _____
Searcher Prep Time: _____
Online Time: _____

Type of Search
NA# _____ AA# _____
S/L: _____ Oligomer: _____
Encode/Transl: _____
Structure #: _____ Text: _____
Inventor: _____ Litigation: _____

Vendors and cost where applicable
STN: _____
DIALOG: _____
QUESTEL/ORBIT: _____
LEXIS/NEXIS: _____
SEQUENCE SYSTEM: _____
WWW/Internet: _____
Other (Specify): _____

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OM protein - protein search, using sw model

Run on: May 11, 2006, 11:54:08 ; Search time 189 Seconds
(without alignments)
311.517 Million cell updates/sec

Title: US-10-714-067-24
Perfect score: 680
Sequence: 1 MFPTPLSRFLFDNMLRAHR.....LKDLREGIQTLMGRLEDPSP 134

Scoring table: BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database :

A_Geneseq_21:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
9: geneseqp2005s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|---------------------|
| 1 | 680 | 100.0 | 134 | 2 | AAW92265 Human ant |
| 2 | 675 | 99.3 | 140 | 1 | AAAP91041 Human gro |
| 3 | 675 | 99.3 | 188 | 1 | AD147330 Plasmid p |
| 4 | 675 | 99.3 | 192 | 1 | AAAP90129 Human gro |
| 5 | 675 | 99.3 | 192 | 2 | AAW92264 Human ant |
| 6 | 675 | 99.3 | 192 | 8 | AD147320 Plasmid p |
| 7 | 675 | 99.3 | 192 | 8 | AD147390 Plasmid p |
| 8 | 675 | 99.3 | 192 | 8 | AD147398 Nmer ampl |
| 9 | 675 | 99.3 | 192 | 8 | ADV25451 Human gro |
| 10 | 675 | 99.3 | 192 | 8 | ADV25452 Human gro |
| 11 | 675 | 99.3 | 192 | 8 | ADV91669 Human gro |
| 12 | 675 | 99.3 | 192 | 8 | ADW69738 Human gro |
| 13 | 675 | 99.3 | 192 | 9 | AEBS96379 Human gro |
| 14 | 675 | 99.3 | 192 | 9 | AEBS96178 Human gro |
| 15 | 675 | 99.3 | 192 | 9 | AEBS96376 Human gro |
| 16 | 675 | 99.3 | 192 | 9 | AEBS96180 Human gro |
| 17 | 675 | 99.3 | 192 | 9 | AEBS96382 Human gro |
| 18 | 675 | 99.3 | 192 | 9 | AEBS96380 Human gro |
| 19 | 675 | 99.3 | 193 | 8 | AD147354 Plasmid p |
| 20 | 675 | 99.3 | 206 | 8 | AD147384 Plasmid p |
| 21 | 675 | 99.3 | 261 | 1 | AAAP91299 Human ner |
| 22 | 675 | 99.3 | 262 | 1 | AAAP91299 Human ner |
| 23 | 675 | 99.3 | 391 | 8 | AD147363 Plasmid p |
| 24 | 675 | 99.3 | 574 | 8 | AD147344 Plasmid p |

| | | | | | |
|----|-----|------|-----|---|---------------------|
| 25 | 675 | 99.3 | 576 | 8 | AD147351 Plasmid p |
| 26 | 675 | 99.3 | 589 | 8 | AD147365 N+mer ampl |
| 27 | 675 | 99.3 | 786 | 8 | AD147367 Nmer ampl |
| 28 | 675 | 99.3 | 810 | 8 | AD147388 Amplifica |
| 29 | 672 | 98.8 | 144 | 2 | AAAP05313 Segment o |
| 30 | 672 | 98.8 | 262 | 1 | AAAP61033 Human bet |
| 31 | 672 | 98.8 | 794 | 7 | ADP16507 Human alb |
| 32 | 672 | 98.8 | 800 | 7 | ADP16216 Human alb |
| 33 | 670 | 98.5 | 138 | 1 | AAAP81226 Sequence |
| 34 | 670 | 98.5 | 191 | 2 | AAAP15809 Primary a |
| 35 | 670 | 98.5 | 191 | 2 | AAAP04397 Mutant hu |
| 36 | 670 | 98.5 | 191 | 2 | AAAP04396 Natural h |
| 37 | 670 | 98.5 | 191 | 2 | AAAP04396 Human gro |
| 38 | 670 | 98.5 | 191 | 4 | AAAP17485 Human gro |
| 39 | 670 | 98.5 | 191 | 4 | AAAP17485 Human gro |
| 40 | 670 | 98.5 | 191 | 5 | ABG31865 Mature hu |
| 41 | 670 | 98.5 | 191 | 5 | ABG31863 Mature hu |
| 42 | 670 | 98.5 | 191 | 5 | ABG31866 Mature hu |
| 43 | 670 | 98.5 | 191 | 5 | ABG31857 Mature hu |
| 44 | 670 | 98.5 | 191 | 5 | ABG31862 Mature hu |
| 45 | 670 | 98.5 | 191 | 5 | ABG94932 Human gro |

ALIGNMENTS

| | | |
|----------|---|----------------------------|
| RESULT 1 | AAW92265 | standard; protein; 134 AA. |
| ID | AAW92265 | |
| AC | AAW92265; | |
| XX | | |
| DT | 08-JUN-1999 | (first entry) |
| XX | | |
| DE | Human anti-angiogenic peptide 16k hGH Met-1Pro133. | |
| XX | | |
| KW | Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis; | |
| KW | growth hormone; hGH; hGH-V; capillary endothelial cell proliferation; | |
| KW | placental vasculatization; pregnancy; treatment; angiogenic disease; | |
| KW | tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation; | |
| KW | arthritis; atherosclerotic plaques; corneal graft neovascularisation; | |
| KW | wound healing; proliferative retinopathy; macular degeneration; trachoma; | |
| KW | granuloma; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome; | |
| KW | psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion; | |
| KW | ulcer; leukaemia; reproductive disorder; contraceptive agent; | |
| KW | gene therapy; pre-eclampsia; intrauterine growth retardation; | |
| KW | placental dysfunction. | |
| XX | | |
| OS | Homo sapiens. | |
| XX | | |
| PN | W09851323-A1. | |
| XX | | |
| PD | 19-NOV-1998. | |
| XX | | |
| PF | 12-MAY-1998; 98WO-US009691. | |
| XX | | |
| PR | 13-MAY-1997; 97US-0046394P. | |
| XX | | |
| PA | (REGC) UNIV CALIFORNIA. | |
| XX | | |
| PI | Weiner RI, Martial JA, Struman I, Taylor R; | |
| XX | | |
| DR | WPI, 1999-045192/04. | |
| XX | | |
| DR | N-PSDB; AAX01707. | |
| XX | | |
| PT | New anti-angiogenic peptides - comprise N-terminal fragments of human | |
| XX | placental lactogen, human growth hormone, growth hormone variant or human | |
| XX | prolactin. | |
| PS | Claim 4; Page 49-50; 87pp; English. | |
| XX | | |
| CC | This invention describes novel human anti-angiogenic peptides derived | |
| XX | from 10 to 150 consecutive amino acids selected from the N-terminal end | |

CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vasculatisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vasculatisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiodysplasia, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vasculatisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Ogier-Webber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriorachnoidoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction
CC XX
SQ Sequence 134 AA;

Query Match Best Local Similarity 100.0%; Score 680; DB 2; Length 134;
Matches 134; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MFPTIPISRLFDNAMLRAHRLHQLAFTYQEFEEAYIPKCKYSFLONPOTLSFSSESIP 60
DB 1 MFPTIPISRLFDNAMLRAHRLHQLAFTYQEFEEAYIPKCKYSFLONPOTLSFSSESIP 60
QY 61 TPSNREETOQKSNLELRISILLIQSWLEPQFRLSVFANSLSVYGASDSNVYDLKDLER 120
DB 61 TPSNREETOQKSNLELRISILLIQSWLEPQFRLSVFANSLSVYGASDSNVYDLKDLER 120
QY 121 GIQTLMGRLDGGSP 134
DB 121 GIQTLMGRLDGGSP 134

RESULT 2
AAP91041 ID AAP91041 standard; protein; 140 AA.

XX AAP91041;
AC 24-OCT-2003 (revised)
DT 14-DEC-1989 (first entry)
XX Human growth hormone segment.
DE Human growth hormone; fusion protein; thrombin; geriatric dementia;
KW nervous disorders; human nerve factor.
XX Homo sapiens; (human).
OS EP329175-A.
PN 23-AUG-1989.
PD 17-FEB-1989; 89EP-00102795.
XX 19-FEB-1988; 86JP-00035042.
PR 19-FEB-1988; 86JP-00035042.
XX (TOYU) TOSOH CORP.
XX

PI Ohtsuka E;
XX WPI; 1989-243092/34.
DR New human nerve growth factor gene encoding fusion protein - having
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.
XX Disclosure; Page 21; 38pp; English.
XX Human growth hormone segment, used at the N-terminal of a fusion protein,
CC which contains a thrombin recognition site, and human beta nerve growth
CC factor (beta-NGF) at the C-terminal. Beta-NGF can be used to control
CC geriatric dementia and other nervous disorders, and can be released from
CC the fusion protein by incubation with thrombin (see AA90577-8, AAP91034,
CC AAP91299). (Updated on 24-OCT-2003 to standardise OS field)
CC XX
SQ Sequence 140 AA;

Query Match Best Local Similarity 99.3%; Score 675; DB 1; Length 140;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPISRLFDNAMLRAHRLHQLAFTYQEFEEAYIPKCKYSFLONPOTLSFSSESIP 60
DB 1 MFPTIPISRLFDNAMLRAHRLHQLAFTYQEFEEAYIPKCKYSFLONPOTLSFSSESIP 60
QY 61 TPSNREETOQKSNLELRISILLIQSWLEPQFRLSVFANSLSVYGASDSNVYDLKDLER 120
DB 61 TPSNREETOQKSNLELRISILLIQSWLEPQFRLSVFANSLSVYGASDSNVYDLKDLER 120
QY 121 GIQTLMGRLDGGSP 134
DB 121 GIQTLMGRLDGGSP 134

RESULT 3
ADI47330 ID ADI47330 standard; protein; 188 AA.

AC ADI47330;
XX 22-APR-2004 (first entry)
XX Plasmid p0A11A1 amino acid sequence SEQ ID NO:18.
DE multimer assembly; DNA sequence; amplification cassette;
XX monomer sequence; restriction pair member; diagnostic protein;
KW therapeutic protein.
XX Synthetic.
OS WO2004007687-A2.
PN 22-JAN-2004.
PD 16-JUL-2003; 2003WO-US022216.
XX 16-JUL-2002; 2002US-0396466P.
PR 16-JUL-2002; 2002US-0396466P.
XX (BUSA/) BUSAELL S.
PA Busaell S;
PI WPI; 2004-122926/12.
DR N-PSDB; ADI47329.
XX

XX Multimer assembly of DNA sequences comprising an amplification cassette
PT having monomer sequences and 5' restriction pair member (RPM) at its 5'
PT terminus and 3' RPM at its 3' terminus.
XX Example 2; SEQ ID NO 18; 163pp; English.

XX The present invention describes a multimer assembly of DNA sequences (I)
CC

CC comprising at least one amplification cassette (AC) having at least one
CC monomer sequence whose polymerisation is desired, and a 5' restriction
CC pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and
CC one or more of following: (a) 3'-terminal cassette comprising 3' specific
CC sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal
CC cassette comprising 5' specific sequence and 3' RPM site fused to a 5'
CC RM site of AC. (1) can be used for expressing a diagnostic protein or
CC therapeutic protein. In (1), the diagnostic protein and therapeutic
CC protein is a cytokine, a growth factor, a hormone, a receptor, a receptor
CC ligand, an enzyme, an inhibitor, a transcription factor, a translation
CC factor, a DNA replication factor, an activator, a chaperonin, or an
CC antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta,
CC IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8,
CC IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin,
CC colony-stimulating factor-1, granulocyte colony-stimulating factor,
CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory
CC factor, tumour necrosis factor, lymphotoxin, platelet-derived growth
CC factor, fibroblast growth factor, vascular endothelial cell growth
CC factor, epidermal growth factor, transforming growth factor-beta,
CC transforming growth factor-alpha, thrombopoietin, stem cell factor,
CC oncostatin M, amphiregulin, muellerian-inhibiting substance, B-cell growth
CC factor, macrophage migration inhibiting factor, endostatin, or
CC angiostatin. The present sequence is used in the exemplification of the
CC present invention.

SO Sequence 188 AA;

Query Match 99.3%; Score 675; DB 8; Length 188;
Best Local Similarity 99.3%; Pred. No. 8.1e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNAMLRAHRLHQLAFTYQEFERAYIPKROKYSFLQNPOTSLSFSSSIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFTYQEFERAYIPKROKYSFLQNPOTSLSFSSSIP 60
QY 61 TPSNREBTOQKSNLDELIRISILLIQSWLEBPVQFLRSVFANSIYVGASDSNVYDLKDL 120
Db 61 TPSNREBTOQKSNLDELIRISILLIQSWLEBPVQFLRSVFANSIYVGASDSNVYDLKDL 120
QY 121 GIOTLMGRLEDDSP 134
Db 121 GIOTLMGRLEDDSP 134

RESULT 4
AAP90129
ID AAP90129 standard; protein; 192 AA.

AC AAP90129;
XX
XX 24-OCT-2003 (revised)
DT 25-MAR-2003 (revised)
DT 06-FEB-1996 (revised)
DT 01-NOV-1989 (first entry)
XX
DE Human growth hormone.
XX
XX Human growth hormone; fusion protein; recombinant vector.
XX
OS Homo sapiens; (Human).
XX
PN JP01144981-A.
XX
PD 07-JUN-1989.
XX
PF 02-DEC-1987; 87JP-00304937.
XX
PR 02-DEC-1987; 87JP-00304937.
XX
PA (WAKT) WAKUNAGA SEIYAKU KK.
XX
XX WPI; 1989-209284/29.
DR N-PSDB; AAN90269.

XX
PT Recombinant vector contg. fused protein aminoacid coding - composed of
PT growth hormone or its polypeptide deriv. and foreign protein.
PS Disclosure; Fig 1, 19pp; Japanese.

XX
XX The invention consists of a vector contg. a fusion protein which is
CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
CC formed by substen. of Met-14 with leu) and a foreign protein. Stability
CC of the vector in the host is greatly increased so the protein yield is
CC higher. (Updated on 25-MAR-2003 to correct PA field.) (Updated on 24-OCT-
XX 2003 to standardise OS field)

SO Sequence 192 AA;

Query Match 99.3%; Score 675; DB 1; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNAMLRAHRLHQLAFTYQEFERAYIPKROKYSFLQNPOTSLSFSSSIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFTYQEFERAYIPKROKYSFLQNPOTSLSFSSSIP 60
QY 61 TPSNREBTOQKSNLDELIRISILLIQSWLEBPVQFLRSVFANSIYVGASDSNVYDLKDL 120
Db 61 TPSNREBTOQKSNLDELIRISILLIQSWLEBPVQFLRSVFANSIYVGASDSNVYDLKDL 120
QY 121 GIOTLMGRLEDDSP 134
Db 121 GIOTLMGRLEDDSP 134

RESULT 5
AAM92264
ID AAM92264 standard; protein; 192 AA.

AC AAM92264;
XX
XX 08-JUN-1999 (first entry)
DT
XX
DE Human anti-angiogenic peptide hGH Met-1phe191.
XX
XX Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granuloma; glaucoma; ocular; uveitis; fracture; Osher-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.

OS Homo sapiens.
XX
XX WO9851323-A1.
XX
PD 19-NOV-1998.
XX
PF 12-MAY-1998; 98WO-US009691.
XX
PR 13-MAY-1997; 97US-0046394P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Weiner RI, Martial JA, Struman I, Taylor R;
XX
XX WPI; 1999-045192/04.
DR N-PSDB; AAX01706.
XX
XX New anti-angiogenic peptides - comprise N-terminal fragments of human
PT placental lactogen, human growth hormone, growth hormone variant or human

PT prolactin.
XX
PS Example 3; Page 49; 87pp; English.
XX
This invention describes novel human anti-angiogenic peptides derived from 10 to 150 consecutive amino acids selected from the N-terminal end of human placental lactogen (hPL), human growth hormone (hGH), growth hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit capillary endothelial cell proliferation and angiogenesis (ii) inhibit angiogenesis in chick chorioallantoic membrane and (iii) binds to at least one specific receptor which does not bind an intact full length hGH, hPL, prolactin or hGH-V. The invention also describes a method for diagnosing a probable abnormality of placental vasculatization during pregnancy. The peptides can be used for treating an angiogenic disease in a subject, for inhibiting tumour formation or growth in a patient or for modulating vasculatization of a patient's placenta. In particular, the peptides can be used for preventing or treating e.g. malignant tumours, angiodioma, arteriovenous malformation, arthritic such as rheumatoid arthritis, atherosclerotic plaques, corneal graft neovascularisation, delayed wound healing, proliferative retinopathy such as diabetic retinopathy, macular degeneration, granulations such as those occurring in haemophilic joints, inappropriate vasculatization in wound healing such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis, pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours, Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers, leukemia, and reproductive disorders such as follicular and luteal cysts and choriorcarinoma. They can also be used as contraceptive agents. DNA encoding the peptides can be used in gene therapy. The measurement of abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL can be used in assays for impairment of vascular development associated with pre-eclampsia, intrauterine growth retardation, and placental dysfunction

XX
SQ Sequence 192 AA;
XX
Query Match 99.3%; Score 675; DB 2; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
XX
QY 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKQKXSFLONPQTSLSFSSISIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKQKXSFLONPQTSLSFSSISIP 60
XX
QY 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLLE 120
Db 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLLE 120
XX
QY 121 GIOTLMGRLEDDGSP 134
Db 121 GIOTLMGRLEDDGSP 134
XX
RESULT 6
ADI47320
XX ADI47320 standard; protein; 192 AA.
XX
AC ADI47320;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A0 amino acid sequence SEQ ID NO:8.
XX
XX multimer assembly; DNA sequence; amplification cassette;
KM monomer sequence; restriction pair member; diagnostic protein;
XX therapeutic protein.
XX
OS Synthetic.
XX
PN MO2004007687-A2.
XX
PD 22-JAN-2004.
XX

PF 16-JUL-2003; 2003MO-US022216.
XX
PR 16-JUL-2002; 2002US-0396466P.
XX
XX (BUSEL/) BUSESEL S.
XX
PI Buse1 S;
XX
PT WPI; 2004-122926/12.
DR N-PSDB; ADI47319.
XX
PT Multimer assembly of DNA sequences comprising an amplification cassette having monomer sequences and 5' restriction pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus.
XX
PS Example 1; SEQ ID NO 8; 163pp; English.
XX
CC The present invention describes a multimer assembly of DNA sequences (I) comprising at least one amplification cassette (AC) having at least one monomer sequence whose polymerisation is desired, and a 5' restriction pair member (RPM) at its 5' terminus and 3' RPM at its 3' terminus, and one or more of following: (a) 3'-terminal cassette comprising 3' specific sequence and 5' RPM site fused to a 3' RPM site of AC; or (b) 5'-terminal cassette comprising 5' specific sequence and 3' RPM site fused to a 5' RPM site of AC. (I) can be used for expressing a diagnostic protein or therapeutic protein. In (I), the diagnostic protein and therapeutic protein is a cytokine, a growth factor, a hormone, a receptor, a receptor ligand, an enzyme, an inhibitor, a transcription factor, a translation factor, a DNA replication factor, an activator, a chaperonin, or an antibody. The therapeutic protein is interferon (IFN) alpha, IFN-beta, IFN-gamma, interleukin (IL)-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, erythropoietin, colony-stimulating factor-1, granulocyte colony-stimulating factor, CC granulocyte-macrophage colony-stimulating factor, leukaemia inhibitory factor, tumour necrosis factor, lymphotxin, platelet-derived growth factor, fibroblast growth factors, vascular endothelial cell growth factor, epidermal growth factor, transforming growth factor-beta, CC transforming growth factor-alpha, thrombopoietin, stem cell factor, CC oncostatin M, amphiregulin, muellerian-inhibiting substance, B-cell growth factor, macrophage migration inhibiting factor, endostatin, or CC angiotatin. The present sequence is used in the exemplification of the present invention.
XX
SQ Sequence 192 AA;
XX
Query Match 99.3%; Score 675; DB 8; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
XX
QY 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKQKXSFLONPQTSLSFSSISIP 60
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKQKXSFLONPQTSLSFSSISIP 60
XX
QY 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLLE 120
Db 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLLE 120
XX
QY 121 GIOTLMGRLEDDGSP 134
Db 121 GIOTLMGRLEDDGSP 134
XX
RESULT 7
ADI47390
XX ADI47390 standard; protein; 192 AA.
XX
AC ADI47390;
XX
DT 22-APR-2004 (first entry)
XX
DE Plasmid p0A5IA amino acid sequence SEQ ID NO:78.
XX
XX multimer assembly; DNA sequence; amplification cassette;
KM


```
DB      61  TPSNRRETOOKSNLELRISILLIQSWLEBPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
QY      121  |||||
DB      121  GIOTLMGRLEDGSP 134

RESULT 9
ADV25451 ID ADV25451 standard; protein; 192 AA.
XX
XX ADV25451,
XX
XX 24-FEB-2005 (first entry)
XX
XX Human growth hormone O-glycosylation mutant 6.
XX
XX Somatotropin; protein engineering; glycosylation; hormone; dwarfism;
XX endocrine-gen.; endocrine disease; metabolic disorder; mutein.
XX
XX Homo sapiens.
XX Synthetic.
XX MO2004103275-A2.
XX
XX 02-DEC-2004.
XX
XX 07-MAY-2004; 2004MO-US014254.
XX
XX 09-MAY-2003; 2003US-0469114P.
XX 13-AUG-2003; 2003US-0494751P.
XX 14-AUG-2003; 2003US-0495076P.
XX 08-JAN-2004; 2004US-0535290P.
XX
XX (NEOS-) NEOSR TECHNOLOGIES INC.
XX (DEFR/) DEPREBS S.
XX
XX Clausen H;
XX
XX WPI; 2004-834156/82.
XX
XX New nucleic acid comprising a sequence encoding a mutant human growth
XX hormone comprising a newly introduced N-linked or O-linked glycosylation
XX site, useful in preparing a composition for treating human growth hormone
XX deficiency.
XX
XX Claim 13; SEQ ID NO 8; 136pp; English.
XX
XX The present sequence is that of a mutant human growth hormone
XX (somatotropin) which includes an N-terminal Met residue. The invention
XX relates to mutants ADV25446-ADV25452 of human somatotropin that contain
XX newly introduced N-linked or O-linked glycosylation site(s), such that
XX these recombinantly produced polypeptides have glycosylation patterns
XX distinctly different from that of the naturally-occurring hormone. The
XX polynucleotide coding sequences for the mutants, expression cassettes
XX comprising the coding sequences, cells expressing the mutants, and
XX methods for producing the mutants are also provided, as well as
XX pharmaceutical compositions comprising the mutants and methods for using
XX the mutants. The mutant growth hormone is optionally conjugated to one or
XX more modifying group(s), preferably via glycoconjugation giving rise to a
XX glycosyl linking group between the glycosylation site and the modifying
XX group. An exemplary modifying group is polyethylene glycol. The mutant
XX growth hormone is used in a claimed method for treating human growth
XX hormone deficiency in a patient.
XX
XX Sequence 192 AA;
SQ
Query Match 99.3%; Score 675; DB 8; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFPTYQFEFEAYIPKEOKYSFLONPOTSLCFSSSIP 60
|||||
```

```
DB      1  MFPTIPLSRLFDNMLRAHRLHQLAFPTYQFEFEAYIPKEOKYSFLONPOTSLCFSSSIP 60
QY      61  |||||
DB      61  TPSNRRETOOKSNLELRISILLIQSWLEBPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
QY      121  |||||
DB      121  GIOTLMGRLEDGSP 134

RESULT 10
ADV25452 ID ADV25452 standard; protein; 192 AA.
XX
XX ADV25452,
XX
XX 24-FEB-2005 (first entry)
XX
XX Human growth hormone O-glycosylation mutant 7.
XX
XX Somatotropin; protein engineering; glycosylation; hormone; dwarfism;
XX endocrine-gen.; endocrine disease; metabolic disorder; mutein.
XX
XX Homo sapiens.
XX Synthetic.
XX MO2004103275-A2.
XX
XX 02-DEC-2004.
XX
XX 07-MAY-2004; 2004MO-US014254.
XX
XX 09-MAY-2003; 2003US-0469114P.
XX 13-AUG-2003; 2003US-0494751P.
XX 14-AUG-2003; 2003US-0495076P.
XX 08-JAN-2004; 2004US-0535290P.
XX
XX (NEOS-) NEOSR TECHNOLOGIES INC.
XX (DEFR/) DEPREBS S.
XX
XX Clausen H;
XX
XX WPI; 2004-834156/82.
XX
XX New nucleic acid comprising a sequence encoding a mutant human growth
XX hormone comprising a newly introduced N-linked or O-linked glycosylation
XX site, useful in preparing a composition for treating human growth hormone
XX deficiency.
XX
XX Claim 13; SEQ ID NO 9; 136pp; English.
XX
XX The present sequence is that of a mutant human growth hormone
XX (somatotropin) which includes an N-terminal Met residue. The invention
XX relates to mutants ADV25446-ADV25452 of human somatotropin that contain
XX newly introduced N-linked or O-linked glycosylation site(s), such that
XX these recombinantly produced polypeptides have glycosylation patterns
XX distinctly different from that of the naturally-occurring hormone. The
XX polynucleotide coding sequences for the mutants, expression cassettes
XX comprising the coding sequences, cells expressing the mutants, and
XX methods for producing the mutants are also provided, as well as
XX pharmaceutical compositions comprising the mutants and methods for using
XX the mutants. The mutant growth hormone is optionally conjugated to one or
XX more modifying group(s), preferably via glycoconjugation giving rise to a
XX glycosyl linking group between the glycosylation site and the modifying
XX group. An exemplary modifying group is polyethylene glycol. The mutant
XX growth hormone is used in a claimed method for treating human growth
XX hormone deficiency in a patient.
XX
XX Sequence 192 AA;
SQ
Query Match 99.3%; Score 675; DB 8; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
```

Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKQKYSFLONPOTSLSFSSSIP 60
 |||
 DB 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKQKYSFLONPOTSLSFSSSIP 60
 |||

QY 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||
 DB 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||

QY 121 GIQTLMGRLDGGSP 134
 |||
 DB 121 GIQTLMGRLDGGSP 134
 |||

RESULT 11
 ID ADV91669 standard; protein; 192 AA.
 XX ADV91669;
 AC 24-FEB-2005 (first entry)
 XX
 DT Human growth hormone protein for recombinant production.
 DE
 XX recombinant protein; recombinant DNA; somatotropin; growth hormone.
 KM
 XX Homo sapiens.
 OS
 XX RU2233879-C1.
 PN 10-AUG-2004.
 PD 17-DEC-2002; 2002RU-00133932.
 PF 17-DEC-2002; 2002RU-00133932.
 XX
 PR 17-DEC-2002; 2002RU-00133932.
 XX
 PA (ASBI=) AS RUSSIA BIO-ORGANIC CHEM INST.
 PA (MAST=) MASTERKON STOCK CO.
 XX
 PI Gabibov AG, Ponomarenko NA, Vorobev II, Demin AV, Martyanov VA;
 PI Shuster AM, Baizhamshvili DI, Mirosnikov AI;
 XX
 DR WPI; 2004-622511/60.
 DR N-PSDB; ADV91670, ADV91671.
 XX
 PT Recombinant plasmid DNA pES1-6 encoding somatotropin polypeptide, useful
 PT in the improved production of recombinant somatotropin.
 XX
 PS Disclosure; Fig 1; 10pp; Russian.
 XX
 CC The invention relates to a recombinant plasmid DNA pES1-6 encoding a
 CC polypeptide with somatotropin amino acid sequence with molecular mass
 CC 3.66 kDa (5949 pair bases). The specification also discloses an
 CC *Escherichia coli* BL21(DE3)/pES1-6 strain comprising a recombinant plasmid
 CC DNA pES1-6 as a producer of recombinant somatotropin. The invention
 CC provides a method for preparing recombinant somatotropin with high yield
 CC by the simplified technology. The plasmid can be used for preparing
 CC recombinant human growth hormone. This sequence corresponds to the
 CC somatotropin protein.
 CC
 SQ Sequence 192 AA;
 Query Match 99.3%; Score 675; DB 8; Length 192;
 Best Local Similarity 99.3%; Pred. No. 8.3e-58;
 Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKQKYSFLONPOTSLSFSSSIP 60
 |||
 DB 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKQKYSFLONPOTSLSFSSSIP 60
 |||

QY 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||
 DB 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||

QY 121 GIQTLMGRLDGGSP 134
 |||
 DB 121 GIQTLMGRLDGGSP 134
 |||

DB 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||
 QY 121 GIQTLMGRLDGGSP 134
 |||
 DB 121 GIQTLMGRLDGGSP 134
 |||

RESULT 12
 ID ADM69738 standard; protein; 192 AA.
 XX ADM69738;
 AC 24-MAR-2005 (first entry)
 XX
 DT Human growth hormone-192.
 DE
 XX Somatotropin; recombinant protein.
 KM
 XX Homo sapiens.
 OS
 XX CN1524959-A.
 PN 01-SEP-2004.
 PD 16-SEP-2003; 2003CN-00146818.
 PF 16-SEP-2003; 2003CN-00146818.
 XX
 PR 16-SEP-2003; 2003CN-00146818.
 XX
 PA (ZHOU/) ZHOU Q.
 XX
 XX Zhou Q, Xiao K, Peng L;
 PI WPI; 2004-797651/79.
 DR
 XX
 PT Method for producing gene engineering recombination 192 peptide human
 PT growth hormone.
 XX
 PS Disclosure; Page 5; 16pp; Chinese.
 XX
 CC The invention related to a method for producing recombinant human growth
 CC hormone (GH). The method comprises: (1) obtaining human GH gene using
 CC Phil-D2 plasmid as a shuttle plasmid to transport GH cDNA into yeast
 CC cells, through the isogeny recombination with the genes on the yeast
 CC cell, gene engineering hGH yeast is constructed, (2) expression system,
 CC using the strain of *Pichia pastoris* as the expression host for human GH
 CC expression through the mode of inter-cell expression and (3) evoking hGH
 CC yeast expression for preparing human GH. The present sequence was used to
 CC illustrate the invention.
 CC
 SQ Sequence 192 AA;
 Query Match 99.3%; Score 675; DB 8; Length 192;
 Best Local Similarity 99.3%; Pred. No. 8.3e-58;
 Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKQKYSFLONPOTSLSFSSSIP 60
 |||
 DB 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKQKYSFLONPOTSLSFSSSIP 60
 |||

QY 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||
 DB 61 TPSNRRETOOKSNLELRLISLLLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLLKDL 120
 |||

QY 121 GIQTLMGRLDGGSP 134
 |||
 DB 121 GIQTLMGRLDGGSP 134
 |||

RESULT 13
 ID AEB96379 standard; protein; 192 AA.
 XX AEB96379

AC AEB96379;
XX 06-OCT-2005 (first entry)
XX
XX Human growth hormone, hGH, mutant polypeptide #4.
DE
XX antianemic; nephrotropic; neuroprotective; nootropic; cerebroprotective;
XX anti-HIV; antiinflammatory; virocidic; hepatotropic; cytostatic;
XX immunosuppressive; respiratory-gen.; muscular-gen.; immunomodulator;
XX Human growth hormone; hGH; mutein.
XX
XX Homo sapiens.
OS Synthetic.
XX WO2005070138-A2.
XX
XX 04-AUG-2005.
XX
XX 10-JAN-2005; 2005MO-US000799.
XX
XX 08-JAN-2004; 2004US-0535284P.
XX 12-FEB-2004; 2004US-0544411P.
XX 20-FEB-2004; 2004US-0546631P.
XX 23-MAR-2004; 2004US-0555813P.
XX 12-MAY-2004; 2004US-0570891P.
XX
XX (NEOS-) NEOS TECHNOLOGIES INC.
XX
XX Defrees S, Zopf DA, Wang Z, Clausen H;
XX WPI; 2005-597714/61.
XX
XX Novel mutant polypeptide having O-linked glycosylation site that does not
XX exist in wild-type polypeptide, useful for providing granulocyte colony
XX stimulating factor therapy, hormone therapy and interferon therapy.
XX
XX Example 13; Page 156; 197pp; English.
XX
XX The invention relates to an isolated polypeptide (I) comprising a mutant
XX peptide sequence, where the mutant peptide sequence encodes an O-linked
XX glycosylation site that does not exist in a wild-type polypeptide. Also
XX disclosed are pharmaceutical compositions (PCI-4). (I) and PCI are useful
XX for providing G-CSF therapy to a subject in need of the therapy. (I) and
XX PCI are useful for providing growth hormone therapy to a subject in need
XX of therapy. (I) and PCI are useful for providing G-CSF therapy to a subject
XX in need of therapy. (I) and PCI are useful for providing interferon
XX therapy to a subject in need of therapy. (I) and PCI-PCI are useful for
XX treating general anemia, chronic renal failure, nephritis, and
XX thalassemia; neurological disorders such as brain/spine injury,
XX Alzheimer's disease and multiple sclerosis; treating AIDS and hepatitis B
XX or C, viral infections caused by a variety of viruses such as human
XX papilloma virus (HBV), coronavirus, HIV, cancers such as AIDS-related
XX Kaposi's sarcoma, malignant melanoma, renal cancer, bone cancers,
XX treating an assortment of other diseases and conditions such as Sjogren's
XX syndrome (autoimmune disease), chronic fatigue syndrome, and pulmonary
XX fibrosis, treating CNS disorders such as herpes simplex virus (HSV),
XX musculoskeletal infections. The present sequence represents the amino
XX acid sequence of a mutant human growth hormone, hGH, polypeptide.
XX
XX Sequence 192 AA;
SQ
Query Match 99.3%; Score 675; DB 9; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 MFPTIPISRLFDNMLRAHRLHQAFTYQFBEAYIPKXKGYFLQNPQTSLSFSSSIP 60
DB 1 MFPTIPISRLFDNMLRAHRLHQAFTYQFBEAYIPKXKGYFLQNPQTSLSFSSSIP 60
QY 61 TPSRREETQOKSNLELRISLLIQSMLEPVQFIRSYFANSVLVYGASDSNVYDLKOLEB 120
DB 61 TPSRREETQOKSNLELRISLLIQSMLEPVQFIRSYFANSVLVYGASDSNVYDLKOLEB 120

QY 121 GIOTLMGRLEDGSP 134
DB 121 GIOTLMGRLEDGSP 134
RESULT 14
AEB96178
ID AEB96178 standard; protein; 192 AA.
XX
XX AEB96178;
AC
XX 06-OCT-2005 (first entry)
XX
XX Human growth hormone, hGH, polypeptide SEQ ID NO 19.
XX
XX antianemic; nephrotropic; neuroprotective; nootropic; cerebroprotective;
XX anti-HIV; antiinflammatory; virocidic; hepatotropic; cytostatic;
XX immunosuppressive; respiratory-gen.; muscular-gen.; immunomodulator;
XX human growth hormone; hGH.
XX
XX Homo sapiens.
OS
XX WO2005070138-A2.
XX
XX 04-AUG-2005.
XX
XX 10-JAN-2005; 2005MO-US000799.
XX
XX 08-JAN-2004; 2004US-0535284P.
XX 12-FEB-2004; 2004US-0544411P.
XX 20-FEB-2004; 2004US-0546631P.
XX 23-MAR-2004; 2004US-0555813P.
XX 12-MAY-2004; 2004US-0570891P.
XX
XX (NEOS-) NEOS TECHNOLOGIES INC.
XX
XX Defrees S, Zopf DA, Wang Z, Clausen H;
XX WPI; 2005-597714/61.
XX
XX Novel mutant polypeptide having O-linked glycosylation site that does not
XX exist in wild-type polypeptide, useful for providing granulocyte colony
XX stimulating factor therapy, hormone therapy and interferon therapy.
XX
XX Claim 26; SEQ ID NO 19; 197pp; English.
XX
XX The invention relates to an isolated polypeptide (I) comprising a mutant
XX peptide sequence, where the mutant peptide sequence encodes an O-linked
XX glycosylation site that does not exist in a wild-type polypeptide. Also
XX disclosed are pharmaceutical compositions (PCI-4). (I) and PCI are useful
XX for providing G-CSF therapy to a subject in need of the therapy. (I) and
XX PCI are useful for providing growth hormone therapy to a subject in need
XX of therapy. (I) and PCI are useful for providing G-CSF therapy to a subject
XX in need of therapy. (I) and PCI are useful for providing interferon
XX therapy to a subject in need of therapy. (I) and PCI-PCI are useful for
XX treating general anemia, chronic renal failure, nephritis, and
XX thalassemia; neurological disorders such as brain/spine injury,
XX Alzheimer's disease and multiple sclerosis; treating AIDS and hepatitis B
XX or C, viral infections caused by a variety of viruses such as human
XX papilloma virus (HBV), coronavirus, HIV, cancers such as AIDS-related
XX Kaposi's sarcoma, malignant melanoma, renal cancer, bone cancers,
XX treating an assortment of other diseases and conditions such as Sjogren's
XX syndrome (autoimmune disease), chronic fatigue syndrome, and pulmonary
XX fibrosis, treating CNS disorders such as herpes simplex virus (HSV),
XX musculoskeletal infections. The present sequence represents the amino
XX acid sequence of a human growth hormone, hGH, polypeptide.
XX
XX Sequence 192 AA;
SQ
Query Match 99.3%; Score 675; DB 9; Length 192;
Best Local Similarity 99.3%; Pred. No. 8.3e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNAMLRAHRLHQLAPDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSESIP 60
DB 1 MFPTIPLSRLFDNAMLRAHRLHQLAPDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSESIP 60
QY 61 TPSNREETOOKSNLELLRISILLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKDL 120
DB 61 TPSNREETOOKSNLELLRISILLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKDL 120
QY 121 GIOTLMGRLEDDGSP 134
DB 121 GIOTLMGRLEDDGSP 134

RESULT 15

AEB96376
ID AEB96376 standard; protein; 192 AA.

XX AEB96376;

DT 06-OCT-2005 (first entry)

XX Human growth hormone, hGH, mutant polypeptide #1.

XX antianemic; nephrotropic; neuroprotective; nootropic; cerebroprotective;

KM anti-HIV; antiinflammatory; virucide; hepatotropic; cytostatic;

KM immunosuppressive; respiratory-gen.; muscular-gen.; immunomodulator;

XX Human growth hormone; hGH; mutein.

OS Homo sapiens.

OS Synthetic.

PN NO2005070138-A2.

XX 04-AUG-2005.

PD 10-JAN-2005; 2005WO-US000799.

XX 08-JAN-2004; 2004US-0535284P.

PR 12-FEB-2004; 2004US-0544411P.

PR 20-FEB-2004; 2004US-054631P.

PR 23-MAR-2004; 2004US-0555813P.

PR 12-MAY-2004; 2004US-0570891P.

XX (NEOS-) NEOSE TECHNOLOGIES INC.

XX Defrees S, Zopf DA, Wang Z, Clausen H;

PI WPI; 2005-597714/61.

XX Novel mutant polypeptide having O-linked glycosylation site that does not

PT exist in wild-type polypeptide, useful for providing granulocyte colony

PT stimulating factor therapy, hormone therapy and interferon therapy.

XX Example 13; Page 155; 197pp; English.

XX The invention relates to an isolated polypeptide (I) comprising a mutant

CC peptide sequence, where the mutant peptide sequence encodes an O-linked

CC glycosylation site that does not exist in a wild-type polypeptide. Also

CC disclosed are pharmaceutical compositions (PCI-4). (I) and PCI are useful

CC for providing G-CSF therapy to a subject in need of the therapy. (I) and

CC PCI are useful for providing growth hormone therapy to a subject in need

CC therapy. (I) and PCI are useful for providing G-CSF therapy to a subject

CC musculoskeletal infections. The present sequence represents the amino

CC acid sequence of a mutant human growth hormone, hGH, polypeptide.

XX SQ Sequence 192 AA;

QY Query Match 99.3%; Score 675; DB 9; Length 192;

DB Best Local Similarity 99.3%; Pred. No. 8.3e-58;

QY Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

DB 1 MFPTIPLSRLFDNAMLRAHRLHQLAPDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSESIP 60

QY 61 TPSNREETOOKSNLELLRISILLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKDL 120

DB 61 TPSNREETOOKSNLELLRISILLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKDL 120

QY 121 GIOTLMGRLEDDGSP 134

DB 121 GIOTLMGRLEDDGSP 134

Search completed: May 11, 2006, 11:57:41

Job time : 191 secs

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GenCore version 5.1.8
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OM protein - protein search, using sw model

Run on: May 11, 2006, 11:58:00 ; Search time 39 Seconds
(without alignments)
330.591 Million cell updates/sec

Title: US-10-714-067-24

Perfect score: 680

Sequence: 1 MFPTIPLSRLFDNMLRAHR.....LKDLSEGIQTMGLSDGSP 134

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :
1: p1r1:*
2: p1r2:*
3: p1r3:*
4: p1r4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----|-------------|
| 1 | 670 | 98.5 | 217 | 1 | STHU |
| 2 | 645 | 94.9 | 217 | 2 | 167410 |
| 3 | 603 | 88.7 | 217 | 1 | STHUV |
| 4 | 570.5 | 83.9 | 256 | 1 | STHUV2 |
| 5 | 558 | 82.1 | 217 | 2 | 167409 |
| 6 | 550 | 80.9 | 212 | 2 | 167408 |
| 7 | 550 | 80.9 | 217 | 2 | 153257 |
| 8 | 549 | 80.7 | 217 | 2 | 167411 |
| 9 | 548 | 80.6 | 217 | 1 | LCHUC |
| 10 | 517 | 76.0 | 215 | 2 | A32435 |
| 11 | 517 | 76.0 | 216 | 2 | A26449 |
| 12 | 445 | 65.4 | 216 | 2 | B49159 |
| 13 | 441 | 64.9 | 190 | 2 | PN0140 |
| 14 | 440 | 64.7 | 190 | 2 | JK0219 |
| 15 | 440 | 64.7 | 216 | 1 | STPG |
| 16 | 440 | 64.7 | 216 | 2 | 146145 |
| 17 | 440 | 64.7 | 216 | 2 | JC4632 |
| 18 | 439 | 64.6 | 216 | 1 | STMS |
| 19 | 438 | 64.4 | 216 | 2 | A37782 |
| 20 | 437 | 64.3 | 216 | 1 | STRT |
| 21 | 436 | 64.1 | 190 | 1 | A61544 |
| 22 | 434 | 63.8 | 190 | 2 | US0449 |
| 23 | 434 | 63.8 | 216 | 2 | S49483 |
| 24 | 432 | 63.5 | 190 | 1 | STHO |
| 25 | 418 | 61.5 | 217 | 1 | STBO |
| 26 | 409 | 60.1 | 217 | 1 | STGT |
| 27 | 409 | 60.1 | 217 | 1 | STSH |
| 28 | 409 | 60.1 | 217 | 2 | S32682 |
| 29 | 400 | 58.8 | 216 | 2 | JC1514 |

| | | | | | | |
|----|-------|------|-----|---|--------|--------------------|
| 30 | 397 | 58.4 | 191 | 2 | A60625 | somatotropin - gre |
| 31 | 397 | 58.4 | 216 | 2 | A60509 | somatotropin precu |
| 32 | 390 | 57.4 | 199 | 2 | B32435 | choriommotropin |
| 33 | 382.5 | 56.2 | 216 | 2 | S04929 | somatotropin precu |
| 34 | 343 | 50.4 | 190 | 2 | S21750 | somatotropin - kus |
| 35 | 339 | 49.9 | 195 | 2 | I51250 | somatotropin - bow |
| 36 | 334 | 49.1 | 190 | 2 | A56816 | somatotropin - bul |
| 37 | 325 | 47.8 | 215 | 2 | I51188 | somatotropin - bul |
| 38 | 324 | 47.6 | 215 | 2 | J50037 | somatotropin precu |
| 39 | 290.5 | 42.7 | 183 | 2 | A60623 | somatotropin blu |
| 40 | 256 | 37.6 | 209 | 2 | JT0463 | somatotropin I pre |
| 41 | 241.5 | 35.5 | 163 | 2 | UN0387 | somatotropin - sei |
| 42 | 235 | 34.6 | 139 | 2 | S04353 | somatotropin A - A |
| 43 | 215 | 31.6 | 210 | 2 | I50763 | somatotropin - nob |
| 44 | 215 | 31.6 | 210 | 2 | S21915 | somatotropin - sll |
| 45 | 215 | 31.6 | 210 | 2 | S38351 | somatotropin - sll |

ALIGNMENTS

RESULT 1

STHU
somatotropin 1 precursor [validated] - human
N:Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
N:Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short
C:Species: Homo sapiens (man)
C>Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 09-Jul-2004
C:Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217; A92
R:Denoto, F.M.; Moore, D.D.; Goodman, H.M.
Nucleic Acids Res. 9, 3719-3730, 1981
A:Title: Human growth hormone DNA sequence and mRNA structure: possible alternative spli:
A:Reference number: A93731; MUID:82014933; PMID:6269091
A:Accession: A93731
A:Molecule type: DNA
A:Residues: 1-217 <DEN>
A:Cross-references: UNIPROT:P01241; UNIPARC:UPI00000287EE; GB:V00520
A:Note: The 20K short form somatotropin lacks residues 58-72 (32-46 in the active hormon
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277; PMID:2744760
A:Accession: A32435
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: UNIPARC:UPI00000287EE; GB:U03071; NID:G183148; PIDN:AAA52549.1; PID:
R:Roskam, W.; Rougeon, F.
Nucleic Acids Res. 7, 305-320, 1979
A:Title: Molecular cloning and nucleotide sequence of the human growth hormone structura
A:Reference number: A93694; MUID:80034477; PMID:386281
A:Accession: A93694
A:Molecule type: mRNA
A:Residues: 1-217 <ROS>
A:Cross-references: UNIPARC:UPI00000287EE; GB:V00519
A:Note: 35-Pro was also found
R:Marital, J.A.; Halliwell, R.A.; Baxter, J.D.; Goodman, H.M.
Science 205, 602-607, 1979
A:Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
A:Reference number: A94247; MUID:79203293; PMID:377496
A:Accession: A94247
A:Molecule type: mRNA
A:Residues: 1-217 <MAR>
A:Cross-references: UNIPARC:UPI00000287EE
R:Li, C.H.; Dixon, J.S.; Liu, W.K.
Arch. Biochem. Biophys. 133, 70-91, 1969
A:Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
A:Reference number: A90048; MUID:69289202; PMID:5810834
A:Contents: annotation
R:Li, C.H.; Dixon, J.S.
Arch. Biochem. Biophys. 146, 233-236, 1971
A:Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: rev
A:Reference number: A90051; MUID:72143935; PMID:5144027
A:Accession: A90051

A/Molecule type: protein
A/Residues: 27-94;96-217 <LIC>
A/Cross-references: UNIPARC:UPI0000173468; UNIPARC:UPI0000173469
R/Mall, H.D.
Nature New Biol. 230, 90-91, 1971
A/Title: Revised primary structure for human growth hormone.
A/Reference number: A93397; MUID:71139765; PMID:5279046
A/Molecule type: protein
A/Residues: 27-51 <NIA>
A/Cross-references: UNIPARC:UPI000017346A
R/Mall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
A/Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution
A/Reference number: A93778; MUID:71153968; PMID:5279528
A/Molecule type: protein
A/Residues: 119-120;157-159 <NI2>
A/Cross-references: UNIPARC:UPI000017346B; UNIPARC:UPI000017346C
R/Mall, H.D.
In Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K.,
A/Reference number: A94427
A/Contents: annotation; somatotropin revision
R/Bewley, T.A.; Dixon, J.S.; Li, C.H.
Int. J. Pept. Protein Res. 4, 281-287, 1972
A/Title: Sequence comparison of human pituitary growth hormone, human chorionic somatome
A/Reference number: A91764; MUID:73092028; PMID:4675454
A/Accession: A91764
A/Molecule type: protein
A/Residues: 27-217 <BBW>
A/Cross-references: UNIPARC:UPI0000033871
R/Lewis, U.J.; Bonevald, L.F.; Lewis, L.J.
Biochem. Biophys. Res. Commun. 92, 511-516, 1980
A/Title: The 20,000-dalton variant of human growth hormone: location of the amino acid d
A/Reference number: A90217; MUID:80130196; PMID:7356479
A/Contents: somatotropin, 20K short variant
A/Accession: A90217
A/Molecule type: protein
A/Residues: 46-57;73-80 <LEW>
A/Cross-references: UNIPARC:UPI000017346D; UNIPARC:UPI000017346E
R/Chapman, G.B.; Rogers, K.W.; Brittain, T.; Birdsaw, R.A.; Bates, O.J.; Turner, C.; Ca
J. Biol. Chem. 256, 2395-2401, 1981
A/Title: The 20,000 molecular weight variant of human growth hormone. Preparation and sc
A/Reference number: A92311; MUID:8111361; PMID:7462247
A/Contents: somatotropin, 20K short variant
A/Accession: A92311
A/Molecule type: protein
A/Residues: 27-57;73-79 <CHA>
A/Cross-references: UNIPARC:UPI000017346F; UNIPARC:UPI0000173470
R/Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
J. Protein Chem. 2, 425-436, 1983
A/Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
A/Reference number: A61466
A/Accession: A61466
A/Molecule type: protein
A/Residues: 27-69 <SIN>
A/Cross-references: UNIPARC:UPI00000350CF
A/Note: growth hormone 5K peptide has insulin potentiating activity; its physiological f
R/Robson, V.M.J.; Rae, I.D.; NG, F.
Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
A/Title: Identification of the aspartimide structure in a previously-reported peptide.
A/Reference number: S09685; MUID:90334745; PMID:2378679
A/Accession: S09685
A/Molecule type: protein
A/Residues: 27-34,'L',36-47 <ROB>
A/Cross-references: UNIPARC:UPI0000173471
R/de Vos, A.M.; Ulteich, M.; Kossiakoff, A.A.
Science 255, 306-312, 1992
A/Title: Human growth hormone and extracellular domain of its receptor: crystal structur
A/Reference number: A41728; MUID:92196577; PMID:1549776
A/Contents: annotation; X-ray crystallography, 2.8 angstroms
A/Note: the structure of the complex with growth hormone receptor is described

R/Gray, G.L.; Baldridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
Gene 39, 247-254, 1985
A/Title: Periplasmic production of correctly processed human growth hormone in Escherich
A/Reference number: I41126; MUID:86137393; PMID:33912261
A/Accession: I4126
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-26 <RES>
A/Cross-references: UNIPARC:UPI000003329E; GB:M4398; NID:G183158; PIDN:AAA52554.1; PID:
C/Comment: The gene for this hormone is transcribed only in somatotrophic cells of the ar
C/Comment: About 90% of somatotropin is the 22K long form.
A/Genes: GDB:GH1
A/Cross-references: GDB:119982; OMIM:139250
A/Map position: 17q23.1-17q23.3
A/Intons: 4/1; 57/3; 97/3; 152/3
C/Superfamily: prolactin
C/Keywords: alternative splicing; hormone; pituitary
F/1-26/Domain: signal sequence #status predicted <SIG>
F/21-217/Product: somatotropin 1, long form #status experimental <SOL>
F/21-69/Product: growth hormone 5K peptide #status experimental <5KP>
F/21-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
F/79-191,208-215/Disulfide bonds: #status experimental
Query Match 98.5%; Score 670; DB 1; Length 217;
Best Local Similarity 99.2%; Pred. No. 2.5e-57;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Qy 2 PPTPLSLFDNMLRAHRLHQLAFDYYQFEERYIPKQKYSFLQNPOTSLSSSISPT 61
Db 27 PPTPLSLFDNMLRAHRLHQLAFDYYQFEERYIPKQKYSFLQNPOTSLSSSISPT 86
Qy 62 PSNREETQKSNLELRISILLIQSWLEPQFLRSVFNLSVYGASDSNYYDLKDLDEEG 121
Db 87 PSNREETQKSNLELRISILLIQSWLEPQFLRSVFNLSVYGASDSNYYDLKDLDEEG 146
Qy 122 IQTLMGRLEDGSP 134
Db 147 IQTLMGRLEDGSP 159
RESULT 2
167410
somatotropin - rhesus macaque
N/Alternate names: growth hormone
C/Species: Macaca mulatta (rhesus macaque)
C/Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004
C/Accession: I67410; A05094
R/Golov, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A/Title: Cloning of four growth hormone/chorionic somatomamototropin-related complementary
A/Reference number: I53267; MUID:94008724; PMID:8404617
A/Accession: I67410
A/Status: translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-217 <RES>
A/Cross-references: UNIPROT:P31093; UNIPARC:UPI000003BE15; GB:L16556; NID:G293114; PIDN:
R/Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.
Arch. Biochem. Biophys. 245, 287-291, 1986
A/Title: The primary structure of monkey pituitary growth hormone.
A/Reference number: A05094; MUID:86129460; PMID:3080959
A/Molecule type: protein
A/Accession: A05094
A/Residues: 27-99,'Q',101-178,'D',180-217 <LIC>
A/Cross-references: UNIPARC:UPI00001765E4
A/Note: the monkey species is not identified in the reference
R/Raben, M.S.
Science 125, 883-884, 1957
A/Title: Preparation of growth hormone from pituitaries of man and monkey.
A/Reference number: A44774
A/Contents: annotation; identification of source organism
C/Superfamily: prolactin

Query Match 94.9%; Score 645; DB 2; Length 217;
Best Local Similarity 97.0%; Pred. No. 6.5e-55;
Matches 126; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSSESIP 61
Db 27 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSSESIP 86

QY 62 PSNRBEFOQKSNLELRISLLIQSWLEPVQFLRSVPANSLVYGASDSNYYDLKDLLEG 121
Db 87 PSNRBEFOQKSNLELRISLLIQSWLEPVQFLRSVPANSLVYGASDSNYYDLKDLLEG 146

QY 122 IQTLMGRLEBDGS 133
Db 147 IQTLMGRLEBDGS 158

RESULT 3
STHUV
somatotropin 2 precursor - human
N:Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin; somatotropin 2, long splice form; somatotropin 2, short splice form
C:Species: Homo sapiens (man)
C:Date: 17-Dec-1982 #sequence revision 10-Feb-1995 #text_change 09-Jul-2004
C:Accession: D32435; B28072; A01511; I52104; A60711
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg, P. Genomic 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277; PMID:2744760
A:Accession: D32435
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: UNIPROT:P01242; UNIPARC:UPI0000135C87; GB:J03071; NID:G183146; PIDN:R:Coake, N.E.; Kay, J.; Emery, J.G.; Liebhader, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A:Title: Two distinct species of human growth hormone-variant mRNA in the human placenta
A:Reference number: A92725; MUID:88243769; PMID:3379057
A:Accession: B28072
A:Molecule type: mRNA
A:Residues: 1-217 <CO>
A:Cross-references: UNIPARC:UPI0000135C87
R:Seeburg, P.H.
DNA 1, 239-249, 1982
A:Title: The human growth hormone gene family: nucleotide sequences show recent divergent
A:Reference number: A01511; MUID:83182010; PMID:7169009
A:Accession: A01511
A:Molecule type: DNA
A:Residues: 1-34, 'P', 36-217 <SEE>
A:Cross-references: UNIPARC:UPI0000173472
R:Igout, A.; Scippo, M.L.; Frankenne, F.; Hennen, G.
Arch. Int. Physiol. Biochim. 96, 63-67, 1988
A:Title: Cloning and nucleotide sequence of placental hGH-V cDNA.
A:Reference number: I52104; MUID:89024984; PMID:2460050
A:Accession: I52104
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <ICO>
A:Cross-references: UNIPARC:UPI0000135C87; GB:M38451; NID:G183179; PIDN:AAA35691.1; PID:R:Frankenne, F.; Scippo, M.L.; Van Beeumen, J.; Igout, A.; Hennen, G.
J. Clin. Endocrinol. Metab. 71, 15-18, 1990
A:Title: Identification of placental human growth hormone as the growth hormone-V gene
A:Reference number: A60711; MUID:90317016; PMID:2156278
A:Accession: A60711
A:Molecule type: protein
A:Residues: 27-44,46-57 <FRA>
A:Cross-references: UNIPARC:UPI0000173473; UNIPARC:UPI0000173474
A:Experimental source: tissue placenta
A:Note: partial glycosylation was demonstrated by lectin binding
C:Comment: This gene is expressed by the placenta.
C:Genetics:
A:Gene: GDB:GH2
A:Cross-references: GDB:119983; OMIM:139240
A:Map position: 17q22-17q24

A:introns: 4/1; 57/3; 97/3; 152/3
C:Superfamily: prolactin
C:Keywords: alternative splicing; glycoprotein; hormone; placenta
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-217/Product: somatotropin 2, long splice form #status predicted <SOL>
F:27-57,73-217/Product: somatotropin 2, short splice form #status predicted <SOS>
F:79-191,208-215/Disulfide bonds: #status predicted
F:166/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 88.7%; Score 603; DB 1; Length 217;
Best Local Similarity 91.7%; Pred. No. 7.3e-51;
Matches 122; Conservative 3; Mismatches 8; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSSESIP 61
Db 27 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSSESIP 86

QY 62 PSNRBEFOQKSNLELRISLLIQSWLEPVQFLRSVPANSLVYGASDSNYYDLKDLLEG 121
Db 87 PSNRBEFOQKSNLELRISLLIQSWLEPVQFLRSVPANSLVYGASDSNYYDLKDLLEG 146

QY 122 IQTLMGRLEBDGS 134
Db 147 IQTLMGRLEBDGS 159

RESULT 4
STHUV
somatotropin 2 precursor, splice form 2 - human
N:Alternate names: growth hormone variant-2; placental somatotropin form 2
C:Species: Homo sapiens (man)
C:Date: 30-Sep-1989 #sequence_revision 10-Feb-1995 #text_change 09-Jul-2004
C:Accession: A28072
R:Coake, N.E.; Kay, J.; Emery, J.G.; Liebhader, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A:Title: Two distinct species of human growth hormone-variant mRNA in the human placenta
A:Reference number: A92725; MUID:88243769; PMID:3379057
A:Accession: A28072
A:Molecule type: mRNA
A:Residues: 1-256 <CO>
A:Cross-references: UNIPROT:P01242; UNIPARC:UPI0000283EF
A:Note: an alternative splice junction for intron 4 is used
C:Genetics:
A:Gene: GDB:GH2
A:Cross-references: GDB:119983; OMIM:139240
A:Map position: 17q22-17q24
A:introns: 4/1; 57/3; 97/3; 152/3
C:Superfamily: prolactin
C:Keywords: alternative splicing; hormone; placenta
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

Query Match 83.9%; Score 570.5; DB 1; Length 256;
Best Local Similarity 88.1%; Pred. No. 1.3e-47;
Matches 118; Conservative 4; Mismatches 11; Indels 1; Gaps 1;

QY 2 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSSESIP 61
Db 27 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSSESIP 86

QY 62 PSNRBEFOQKSNLELRISLLIQSWLEPVQFLRSVPANSLVYGASDSNYYDLKDLLEG 121
Db 87 PSNRBEFOQKSNLELRISLLIQSWLEPVQFLRSVPANSLVYGASDSNYYDLKDLLEG 146

QY 122 IQTLMGRLEBDGS 134
Db 147 IQTLMGRLEBDGS 160

RESULT 5
167409
chorionic somatomammotropin-3 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)

```
C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004  
C|Accession: I67409  
R|Golios, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.  
A|Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementan  
A|Reference number: 153267; PMID:94008724; PMID:8404617  
A|Accession: I67409  
A|Status: preliminary; translated from GB/EML/DDBJ  
A|Molecule type: mRNA  
A|Residues: 1-217 <RES>  
A|Cross-references: UNIPROT:C007369; UNIPARC:UPI0000088CB3; GB:L16554; NID:g293112; PIDN:  
C|Superfamily: prolactin
```

```
Query Match      82.1%; Score 558; DB 2; Length 217;  
Best Local Similarity   81.1%; Pred.No. 1.7e+46;  
Matches 107; Conservative 13; Mismatches 12; Indels 0; Gaps 0;
```

```
OY    3 PTIPLSRFDNAMRAHRLHQAFPTVOEFPEAYTPKQKYSLFONPOTLSFSSESITPT 62  
Db     ::::::::::::::::::::||:::||::|||  
        PSVPISRFDMIAQHARLHLADFTYOFEFAATYPKEKHGSIAMENQAFCFESITPT 87  
OY    63 SNRETOOKSNLELRISILLIQSWLBEPVQLRSVFANSILYGASDSNVYDLLKDLEG 122  
Db     SNNRETOOKSNLELRISILLIQSWLBEPVQLSVFPANNLYVGISEDADYLKLNDLEGI 147  
OY    123 QTLMKRLDGGSP 134  
Db     148 QTLMKRLDGGSP 159
```

```
RESULT 6  
I67408  
chorionic somatomammotropin-2 - rhesus macaque (fragment)  
C|Species: Macaca mulatta (rhesus macaque)  
C|Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004  
C|Accession: I67408  
R|Golios, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.  
A|Title: Cloning of four growth hormone/chorionic somatomammotropin-related complemen  
A|Reference number: 153267; PMID:94008724; PMID:8404617  
A|Accession: I67408  
A|Status: preliminary; translated from GB/EML/DDBJ  
A|Molecule type: mRNA  
A|Residues: 1-212 <RES>  
A|Cross-references: UNIPROT:C007368; UNIPARC:UPI0000088EB6; GB:L16553; NID:g293110; PIDN:  
C|Superfamily: prolactin
```

```
Query Match      80.9%; Score 550; DB 2; Length 212;  
Best Local Similarity   79.5%; Pred.No. 9.5e+46;  
Matches 105; Conservative 17; Mismatches 10; Indels 0; Gaps 0;
```

```
OY    3 PTIPLSRFDNAMRAHRLHQAFPTVOEFPEAYTPKQKYSLFONPOTLSFSSESITPT 62  
Db     ::::::::::::::::::::||:::||::|||  
        PSVPISRFDMIAQHARLHLADFTYOFEFAATYPKEKHGSIAMENQAFCFDSITPT 82  
OY    63 SNRETOOKSNLELRISILLIQSWLBEPVQLRSVFANSILYGASDSNVYDLLKDLEGI 122  
Db     SNNRETOOKSNLELRISILLIQSWLBEPVQLSVFPANNLLHTSDSVDVHDLDKDLDEGI 142  
OY    123 QTLMKRLDGGSP 134  
Db     143 ETLMKRLDEDGP 154
```

```
RESULT 7  
I53267  
chorionic somatomammotropin-1 - rhesus macaque  
C|Species: Macaca mulatta (rhesus macaque)  
C|Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 09-Jul-2004  
C|Accession: I53267  
R|Golios, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.  
A|Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementan
```

A:Reference number: 153267; MUID:94008724; PMID:8404617
A:Accession: 153267
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: UNIPROT:Q07367; UNIPARC:UPI0000086C19; GB:LI6552; NID:G293108; PIDD:J
C:Superfamily: prolactin

Query Match 80.9%; Score 550; DB 2; Length 217;
Best Local Similarity 79.5%; Pred. No. 9, 8e-46;
Matches 105; Conservative 17; Mismatches 10; Indels 0; Gaps 0;

QY 3 PPIPSLPLDNLAMLRHQLAFPTTQEFEEAYIPKEQKVSFLQNPQTSLSFSESIPTP 62
DB 28 PSVPLSRPLFDHAMIQAHRLHQLAFPTTQEFEEAYIPKEKHSIMENPQASFCEADSIPTP 87
QY 63 SRSRETOOKSNLELRISLLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKDLREGI 122
DB 88 SRSRETOOKSNLELRISLLLIQSWLEPVQFLRSVFANSLVYHTNSNFDIYLYKDLREGI 147
QY 123 QTLMGRLDGGSP 134
DB 148 ETLMGRLDGGSP 159

RESULT 8
167411
somatotropin - rhesus macaque
N:Alternate names: growth hormone
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence, revision 31-May-1996 #text_change 09-Jul-2004
J:Accession: 167411
R:Golo, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
A:File: Cloning of four growth hormone/chorionic somatomotropin-related complementary
A:Reference number: 153267; MUID:94008724; PMID:8404617
A:Accession: 167411
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: UNIPROT:Q07370; UNIPARC:UPI000016C469; GB:LI6555; NID:G293116; PIDD:J
C:Superfamily: prolactin

Query Match 80.7%; Score 549; DB 2; Length 217;
Best Local Similarity 82.0%; Pred. No. 1, 2e-45;
Matches 109; Conservative 10; Mismatches 14; Indels 0; Gaps 0;

QY 2 PPTILSLRFDNMLRAHRLHQLAFPTTQEFEEAYIPKEQKVSFLQNPQTSLSFSESIPT 61
DB 27 PPTILSLRFDNMLRAHRLHQLAFPTTQEFEEAYIPKEQKVSFLQNPQTSLSFSESIPT 86
QY 62 PSNRRETOOKSNLELRISLLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKDLREGI 121
DB 87 PSNRRETOOKSNLELRISLLLIQSWLEPVQFLRSVFANSLVYHTNSNFDIYLYKDLREGI 146
QY 122 QTLMGRLDGGSP 134
DB 147 IOTLMGRLDGGSP 159

RESULT 9
LCHUC
choiromototropin A precursor [validated] - human
N:Alternate names: chorionic somatomotropin 1; placental lactogen
C:Species: Homo sapiens (man)
C:Date: 23-Oct-1981 #sequence, revision 23-Oct-1981 #text_change 09-Jul-2004
J:Accession: C32435; A94422; I52342; A93833; A93152; A90054; A94427; A61283; I55229; I5964
R:Chen, B.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.
A:File: The human growth hormone locus, nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277; PMID:2744760
A:Accession: C32435
A:Molecule type: DNA

A;Residues: 1-217 <CH>
 A;Cross-references: UNIPROT:P01243; UNIPARC:UPI000000C48; GB:J03071; NID:G181124; PIDN:G181124; PIDN:G181124; PIDN:G181124
 R;Goodman, H.M.; Denoto, F.; Fiddes, J.C.; Halliwell, R.A.; Page, G.S.; Smith, S.; Tisch, in Mobilization and Reassembly of Genetic Information, Scott, W.A., Weiner, R., Joseph, A.;Reference number: A94422
 A;Accession: A94422
 A;Molecule type: mRNA
 A;Residues: 1-217 <GOO>
 A;Cross-references: UNIPARC:UPI000000C48
 R;Tanaka, M.; Maeda, N.; Watabiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashima, Biochem. Int. 16, 287-292, 1988
 A;Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription was A;Reference number: 152342; MUID:88209096; PMID:2835050
 A;Accession: 152342
 A;Status: translated from GB/EMBL/DBJ
 A;Molecule type: mRNA
 A;Residues: 1-3 <TAN>
 A;Cross-references: UNIPARC:UPI000011E96D; GB:M35419; NID:G506822
 R;Sherwood, L.M.; Birstein, Y.; Schechter, I. Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979
 A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human pl A;Reference number: A93833; MUID:80034970; PMID:291043
 A;Accession: A93833
 A;Molecule type: protein
 A;Residues: 1,3-26 <SHE>
 A;Cross-references: UNIPARC:UPI0000173475
 A;Experimental source: Placenta
 R;Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M. Nature 270, 494-499, 1977
 A;Title: Construction and analysis of recombinant DNA for human chorionic somatomammot A;Reference number: A93192; MUID:78071761; PMID:593368
 A;Accession: A93192
 A;Molecule type: DNA
 A;Residues: 50-217 <SHI>
 A;Cross-references: UNIPARC:UPI0000173476
 A;Experimental source: Placenta
 R;Li, C.H.; Dixon, J.S.; Chung, D. Arch. Biochem. Biophys. 155, 95-110, 1973
 A;Title: Amino acid sequence of human chorionic somatomammotropin. A;Reference number: A90054; MUID:73201971; PMID:4712450
 A;Accession: A90054
 A;Molecule type: protein
 A;Residues: 27-217 <LIC>
 A;Cross-references: UNIPARC:UPI0000173477
 A;Experimental source: Placenta
 R;Nall, H.D. in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K., A;Title: The chemistry of the human lactogenic hormones. A;Reference number: A94427
 A;Accession: A94427
 A;Molecule type: protein
 A;Residues: 27-217 <NIA>
 A;Cross-references: UNIPARC:UPI0000173477
 A;Experimental source: Placenta
 R;Nic A Bhaird, N.; Tipton, K.F. Biochem. Soc. Trans. 19, 20S, 1991
 A;Title: Catechol-O-methyltransferase from human placenta: purification and some propert A;Reference number: A61283; MUID:91244006; PMID:2037148
 A;Accession: A61283
 A;Molecule type: protein
 A;Residues: 27-46 <NIC>
 A;Cross-references: UNIPARC:UPI0000173478
 A;Note: chorionmammotropin apparently purified with placental catechol-O-methyltransferase R;Sherwood, L.M.; Handwerker, S.; McLaurin, W.D.; Lamer, M. Nature New Biol. 233, 59-61, 1971
 A;Title: Amino-acid sequence of human placental lactogen. A;Reference number: A93401; MUID:72016313; PMID:5286363
 A;Contents: annotation
 R;Sherwood, L.M.; Handwerker, S.; McLaurin, W.D.; Lamer, M. Nature New Biol. 235, 64, 1972
 A;Reference number: A93405
 A;Contents: annotation
 R;Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.

J. Biol. Chem. 254, 3782-3787, 1979
 A;Title: Identification of the interchain disulfide bonds of dimeric human placental lact A;Reference number: A92251; MUID:79173081; PMID:438159
 A;Contents: annotation; dimeric disulfide bonds
 R;Saly, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L. J. Biol. Chem. 259, 13131-13138, 1984
 A;Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two fu A;Reference number: 155229; MUID:85030426; PMID:6208192
 A;Accession: 155229
 A;Status: translated from GB/EMBL/DBJ
 A;Molecule type: DNA
 A;Residues: 1-217 <RES>
 A;Cross-references: UNIPARC:UPI000000C48; GB:K02401; NID:G181120; PIDN:AAA52115.1; PID:G R;Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H. Trans. Assoc. Am. Physicians 90, 109-116, 1977
 A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone. A;Reference number: 159658; MUID:78160787; PMID:611657
 A;Accession: 159658
 A;Status: translated from GB/EMBL/DBJ
 A;Molecule type: mRNA
 A;Residues: 160-217 <RE2>
 A;Cross-references: UNIPARC:UPI000016A74D; GB:M25118; NID:G181124; PIDN:AAA5721.1; PID:G C;Genetics:
 A;Gene: GDB:CSH1
 A;Cross-references: GDB:119084; OMIM:150200
 A;Map position: 17q22-17q24
 A;Intons: 4/1; 57/3; 97/3; 152/3
 C;Superfamily: prolactin
 C;Keywords: hormone; placenta
 F;1-26/Domain: signal sequence #status experimental <SIG>
 F;27-217/Product: chorionmammotropin A #status experimental <MAT>
 F;79-191/Disulfide bonds: #status experimental
 F;208-215/Disulfide bonds: (in monomeric form) #status experimental
 F;208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
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 Best Local Similarity 82.3%; Pred. No. 1,5e-45;
 Matches 107; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

| | | | |
|----|-----|--|-----|
| QY | 4 | TIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAVYIPKQKYSFLQNPQTSLSFSESIPTPS | 63 |
| DB | 29 | TVPLSRLFDHAMLQARAHQLAIDTYQEFETVYIPKQKYSFLHDSQTSFCFSISIPTPS | 88 |
| QY | 64 | NREETQOKSWLEHLRLSLILIOQMWPVQFLRSPVANSIYVGSDSNVYLLKDLREGIQ | 123 |
| DB | 89 | NMBETQOKSWLEHLRLSLILIESWLPVRLRSMFANNLVYDTSDDYHLKDLREGIQ | 148 |
| QY | 124 | TLMGRLDDGS | 133 |
| DB | 149 | TLMGRLDDGS | 158 |

RESULT 10
 E32435
 N;Alternate names: chorionic somatomammotropin 2
 C;Species: Homo sapiens (man)
 C;Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 09-Jul-2004
 C;Accession: E32435
 R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P. J. Genomics 4, 479-497, 1989
 A;Title: The human growth hormone locus, nucleotide sequence, biology, and evolution. A;Reference number: A32435; MUID:89307277; PMID:2744760
 A;Accession: E32435
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-217 <CH>
 A;Cross-references: UNIPROT:Q14407; UNIPARC:UPI0000073C6A; GB:J03071; NID:G181124; PIDN:J A;Gene: GDB:CSH2
 A;Cross-references: GDB:119813; OMIM:118820
 A;Map position: 17q22-17q24

Query March 64.7%; Score 440; DB 2; Length 190;
Best Local Similarity 66.9%; Pred. No. 3.5e-35;
Matches 89; Conservative 16; Mismatches 26; Indels 2; Gaps 2;

QY 2 PPTPLSRLEPDNMLRAHRLHQALFPTYOEFEENAYIPKEOKYSFLONPOTSLSFSISIPT 61
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 1 FPAAPLPSLFANNVILRAQHHLQAADITYKEFERAVTYEGORYS-IQNAAQAFCSERTIPA 59
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

QY 62 PSNFEEFOQSNNELKAKISLLLIOSWLEPVOLFNSVPANSLVYGASUSNYDLDKDIEEG 121
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
Db 60 PTGDEAQOQSDVELLRFSLLLIQSWLGVPQFLSRVTNSLVFGTSD-RVYEKLKDIEEG 118
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |

Dy 122 IQTLMGRLEDGSP 134
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db 119 IQALMRELEDGSP 131
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

RESULT 15
STPG somatotropin precursor - pig
N/Alternate names: growth hormone
C/Species: Sus scrofa domestica (domestic pig)
C/Date: 30-Jun-1992 #sequence revision 10-Jun-1992 #text change 09-Jul-2004
C/Accession: JMW0015; S09015; I46584; I46585; PC1063; A01516; A94594
R/Vize, P.D.; Wells, J.R.E.
Gene 55, 339-344, 1987
A>Title: Isolation and characterization of the porcine growth hormone gene.
A/Reference number: JMW0015; MUID:88030700; PMID:3666458
A/Accession: JMW0015
A/Molecule type: DNA
A/Residues: 1-216 <VIZ>
A/Cross-references: UNIPROT:P01248; UNIPARC:UP1000002BAC4; GB:X53325; NID:G288361; PIDN:CAA37411.1; PID:
R/Kato, Y.; Shimokawa, N.; Kato, T.; Hiral, T.; Yoshihama, K.; Kawai, H.; Hatтори, M.A.;
Biochim. Biophys. Acta 1048, 290-293, 1990
A>Title: Porcine growth hormone: molecular cloning of cDNA and expression in bacterial e
A/Reference number: S09015; MUID:90212663; PMID:2182128
A/Accession: S09015
A/Molecule type: mRNA
A/Residues: 1-216 <KAT>
A/Cross-references: UNIPARC:UP100000884D5; GB:X53325; NID:G288361; PIDN:CAA37411.1; PID:
R/Sieburg, P.H.; Sias, S.; Adelman, J.P.; de Boer, H.A.; Hayflick, J.; Uhrman, P.; Goed
DNA 2, 37-45, 1983
A>Title: Efficient bacterial expression of bovine and porcine growth hormones.
A/Reference number: I45898; MUID:83209123; PMID:6303731
A/Accession: I45894
A/Status: preliminary; translated from GB/EMBL/DDBT
A/Molecule type: mRNA
A/Residues: 7-8, 'V', '10-21, 'Q', '23-216 <SE->
A/Cross-references: UNIPARC:UP100001422D1; GB:M27326; NID:g164477; PIDN:AAA31045.1; PID:
R/Su, T.
Gene 69, 81-89, 1988
A>Title: A multistate-directed mutagenesis using T7 DNA polymerase: application for recombina
A/Reference number: I46585; MUID:89137997; PMID:3224824
A/Accession: I46585
A/Status: preliminary; translated from GB/EMBL/DDBT
A/Molecule type: mRNA
A/Residues: 1-8, 'V', '10-21, 'Q', '23-42 <SU->
A/Cross-references: UNIPARC:UP100000884D5; GB:M2761; NID:g164479; PIDN:AAA31046.1; PID:
R/Yang, Q.; Zhu, B.L.; Zhou, S.W.; Qi, S.Z.
Chinese J. Biotechnol. 8, 318-323, 1992
A>Title: Cloning and partly sequencing of the porcine growth hormone (pGH) gene from pituitary
A/Reference number: PC1063
A/Accession: PC1063
A/Molecule type: mRNA
A/Residues: 97-108, 'E', '110-158 <YAN>
A/Cross-references: UNIPARC:UP1000017347C
A/Experimental source: Pituitary
R/Miller, J.B.; Howard, S.C.; Scapa, S.; Wilhelm, A.E.
J. Biol. Chem. 245, 3407-3415, 1970
A>Title: Cyanogen bromide cleavage and partial amino acid sequence of porcine growth hor
A/Reference number: A01516; MUID:70293161; PMID:4918150
A/Accession: A01516
A/Molecule type: Protein

A/Residues: 27-30;149-194, 'N', 196-216 <ML>
A/Cross-references: UNIPARC:UPI000017347D; UNIPARC:UPI000017347E
R/Mills, J.B. submitted to the Atlas, May 1971
A/Reference number: A94594
A/Accession: A94594
A/Molecule type: protein
A/Residues: 140-148 <MI2>
A/Cross-references: UNIPARC:UPI000017347F
C/Genetics:
A/Gene: gh
A/Introns: 4/1; 57/3; 96/3; 150/3
C/Superfamily: prolactin
C/Keywords: anterior pituitary; growth factor; hormone
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-216/Product: somatotropin #status predicted <MAT>
F:78-189/Disulfide bonds: #status predicted
F:206-214/Disulfide bonds: #status experimental

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| Best Local Similarity | 66.9% | Pred. No. 4, 1e-35; | | |
| Matches | 89; | Conservative 16; | Mismatches 26; | Indels 2; |
| Gaps | 2; | | | |
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| | | | | |
| Db | 27 | FPAMPPLSLFRANVLRQGHQLADPTYPEKFRAYIPEGQRY-IQNAQAAPCFSEITPA | 85 | |
| QY | 62 | PSNRFTQXKSNLELLRISLLLIQSWLEPVQFLKRSVANSLSVYCASGNSNYDLKDLBEG | 121 | |
| | | | | |
| Db | 86 | PTGCDKDAQQRSDVELLRFFSLLLIQSWIGVPQFLSRVFTSLVFCTSD-RVYEKXKDLBEG | 144 | |
| QY | 122 | IQTLMGRLEDGSP | 134 | |
| | | | | |
| Db | 145 | IQALMRELEDGSP | 157 | |

Search completed: May 11, 2006, 12:02:19
Job time : 40 secs

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GenCore version 5.1.8
Copyright (c) 1993 - 2006 Bioceleration Ltd.

OM protein - protein search, using sw model

Run on: May 11, 2006, 11:54:38 ; Search time 228 Seconds

(without alignments)
414.653 Million cell updates/sec

Title: US-10-714-067-24

Perfect score: 680

Sequence: 1 MFPTPLSLRFDNMLRAHR.....LKDLREGIQTLMGRLEDGSP 134

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|------------------|
| 1 | 670 | 98.5 | 217 | 1 | SOMA_HUMAN |
| 2 | 670 | 98.5 | 217 | 1 | SOMA_PANTR |
| 3 | 670 | 98.5 | 217 | 2 | QSEB53_HUMAN |
| 4 | 666 | 97.9 | 217 | 2 | Q61YF1_HUMAN |
| 5 | 662 | 97.4 | 217 | 2 | Q61YF0_HUMAN |
| 6 | 661 | 97.2 | 217 | 2 | Q4VUJ1_PYGRO |
| 7 | 660 | 97.1 | 217 | 2 | Q4VUK0_HYLLB |
| 8 | 656 | 96.5 | 217 | 2 | Q4VUJ4_PYGACHR n |
| 9 | 656 | 96.5 | 217 | 2 | Q4VUJ3_PYGACHR n |
| 10 | 655 | 96.3 | 217 | 2 | Q4VUK1_HYLLB |
| 11 | 645 | 94.9 | 217 | 1 | SOMA_MACMU |
| 12 | 627 | 92.2 | 217 | 2 | Q4VUJ6_HYLLB |
| 13 | 624 | 91.8 | 217 | 2 | Q8MNE0_ATEGE |
| 14 | 621 | 91.3 | 217 | 1 | SOMA_CALJA |
| 15 | 611 | 89.9 | 217 | 1 | SOMA2_PANTR |
| 16 | 608 | 89.4 | 217 | 1 | SOMA_SAIIB |
| 17 | 604 | 88.8 | 217 | 2 | Q6FHS4_HUMAN |
| 18 | 603 | 88.7 | 217 | 2 | SOMA2_HUMAN |
| 19 | 598 | 87.9 | 217 | 2 | Q6FHS2_HUMAN |
| 20 | 570 | 83.8 | 245 | 2 | Q14644_HUMAN |
| 21 | 566 | 83.2 | 144 | 2 | Q866T9_PANTR |
| 22 | 565 | 83.1 | 217 | 2 | Q4VUJ0_PYGRO |
| 23 | 561 | 82.5 | 217 | 2 | Q4VUJ5_MACAS |
| 24 | 558 | 82.1 | 217 | 2 | Q07369_MACMU |
| 25 | 556 | 81.8 | 217 | 2 | Q866U1_PANTR |
| 26 | 556 | 81.6 | 217 | 2 | Q4VUJ5_PYGACHR n |
| 27 | 555 | 81.6 | 217 | 2 | Q4VUJ8_HYLLB |
| 28 | 553 | 81.3 | 217 | 2 | Q4VUJ9_HYLLB |
| 29 | 551 | 81.0 | 217 | 2 | Q4VUJ6_MACAS |
| 30 | 550 | 80.9 | 212 | 2 | Q07368_MACMU |
| 31 | 550 | 80.9 | 217 | 2 | Q07367_MACMU |

| | | | | | | |
|----|-------|------|-----|---|--------------|--------------------|
| 32 | 550 | 80.9 | 217 | 2 | Q4VUJ9_PYGRO | Q4VUJ9 pygachrix r |
| 33 | 549 | 80.7 | 217 | 2 | Q4VUJ8_PYGRO | Q4VUJ8 pygachrix r |
| 34 | 548 | 80.6 | 217 | 1 | CSH_HUMAN | P01243 homo sapien |
| 35 | 548 | 80.6 | 217 | 2 | Q6PFI1_HUMAN | Q6PFI1 homo sapien |
| 36 | 547 | 80.4 | 217 | 2 | Q4VUJ2_PYGNE | Q4VUJ2 pygachrix n |
| 37 | 546 | 80.3 | 217 | 2 | Q4VUJ7_MACAS | Q4VUJ7 macaca assa |
| 38 | 544 | 80.0 | 217 | 2 | Q866T8_PANTR | Q866T8 pan troglod |
| 39 | 543 | 79.9 | 217 | 2 | Q4VUJ4_MACAS | Q4VUJ4 macaca assa |
| 40 | 537 | 79.0 | 217 | 2 | Q866U0_PANTR | Q866U0 pan troglod |
| 41 | 535.5 | 78.8 | 217 | 2 | Q4VUJ7_HYLLB | Q4VUJ7 hylobates l |
| 42 | 535 | 78.7 | 217 | 1 | SOMA2_MACMU | Q07370 macaca mula |
| 43 | 517.5 | 76.1 | 202 | 2 | Q14643_HUMAN | Q14643 homo sapien |
| 44 | 466 | 68.5 | 217 | 2 | Q8MNE9_ATEGE | Q8MNE9 ateles geof |
| 45 | 452 | 66.5 | 167 | 2 | P78451_HUMAN | P78451 homo sapien |

ALIGNMENTS

RESULT 1
SOMA_HUMAN STANDARD; PRT; 217 AA.
ID P01241; Q14405; Q16631; Q9HE21; Q9UMJ7; Q9UNJ5;
AC 21-JUL-1986 (Rel. 01, Created)
DT 01-MAR-1992 (Rel. 21, Last sequence update)
DT 13-SEP-2005 (Rel. 48, Last annotation update)
DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE hormone) (Growth hormone 1).
GN Name=GH1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Homnidae;
OC Homo
OX NCBI_TaxID=9606;
RN [1]
RN NCLEOTIDE SEQUENCE (ISOFORM 1).
RP MEDLINE=80034477; PubMed=386281;
RA Roskam W., Rougeon F.;
RT "Molecular cloning and nucleotide sequence of the human growth hormone
RT structural gene.";
RL Nucleic Acids Res. 7:305-320(1979).
RN [2]
RN NCLEOTIDE SEQUENCE (ISOFORM 1).
RP MEDLINE=79203293; PubMed=377496;
RA Martini J.A., Hallelwell R.A., Baxter J.D., Goodman H.M.;
RT "Human growth hormone: complementary DNA cloning and expression in
RT bacteria.";
RL Science 205:602-607(1979).
RN [3]
RN NCLEOTIDE SEQUENCE (ISOFORM 1), AND POSSIBLE ALTERNATIVE SPLICING.
RP MEDLINE=82014939; PubMed=6269091;
RA Denoto F.W., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [4]
RN NCLEOTIDE SEQUENCE.
RP MEDLINE=83182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).
RN [5]
RN NCLEOTIDE SEQUENCE.
RP MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [6]
RN NCLEOTIDE SEQUENCE (ISOFORM 3).
RP TISSUE=Pituitary;

- RA Gu J., Huang Q.-H., Li N., Xu S.-H., Han Z.-G., Fu G., Chen Z.;
 RT "A novel gene expressed in human pituitary.";
 RL Submitted (SEP-1999) to the EMBL/GenBank/DBJ databases.
 RN [7]
- RP NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA] (ISOFORM 4).
 RC TISSUE=Pituitary;
 RX MEDLINE=20402571; PubMed=10931946; DOI=10.1073/pnas.160270997;
 RA H.-R.-M., Han Z.-G., Song H.-D., Peng Y.-D., Huang Q.-H., Ren S.-X.,
 RA Gu Y.-J., Huang C.-H., Li Y.-B., Jiang C.-L., Fu G., Zhang Q.-H.,
 RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.,
 RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,
 RA Huang G.-Y., Chen Z., Chen M.-D., Chen J.-L.;
 RT "Gene expression profiling in the human hypothalamus-pituitary-adrenal
 RT axis and full-length cDNA cloning.";
 RL Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548(2000).
 RN [8]
- RP NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA] (ISOFORMS 1 AND 2).
 RC TISSUE=Pituitary;
 RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hatoh F.,
 RA Datchenko L., Marusik K., Farmer A.A., Rubin G.M., Hong L.,
 RA Scapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Ueda T.B., Tomshiyki S., Canninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulys S.W.,
 RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fehey J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,
 RA Blakeley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
 RA Butterfield Y.S.N., Kravinsky M.I., Skalska U., Smalins D.B.,
 RA Scherch A., Schein J.B., Jones S.J.M., Maitra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length human
 RT and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 RN [9]
- RP NUCLEOTIDE SEQUENCE OF 1-26.
 RX MEDLINE=66137393; PubMed=3912261; DOI=10.1016/0378-1119(85)90319-1;
 RA Gray G.L., Baldridge U.S., McKewen K.S., Heyneger H.U., Chang C.N.;
 RT "Perilaminic production of correctly processed human growth hormone in
 RT Escherichia coli: natural and bacterial signal sequences are
 RT interchangeable.";
 RL Gene 39:247-254(1985).
 RN [10]
- RP PROTEIN SEQUENCE OF 27-217.
 RX MEDLINE=69289202; PubMed=5810834;
 RA Li C.H., Dixon J.S., Liu W.-K.;
 RT "Human pituitary growth hormone. XIX. The primary structure of the
 RT hormone.";
 RL Arch. Biochem. Biophys. 133:70-91(1969).
 RN [11]
- RP PROTEIN SEQUENCE OF 27-217, AND SEQUENCE REVISION.
 RX MEDLINE=72143935; PubMed=5144027;
 RA Li C.H., Dixon J.S.;
 RT "Human pituitary growth hormone. 32. The primary structure of the
 RT hormone: revision.";
 RL Arch. Biochem. Biophys. 146:233-236(1971).
 RN [12]
- RP SEQUENCE REVISION.
 RX MEDLINE=73092028; PubMed=4675454;
 RA Bewley T.A., Dixon J.S., Li C.H.;
 RT "Sequence comparison of human pituitary growth hormone, human
 RT chorionic somatomotropin, and ovine pituitary growth and lactogenic
 RT hormones.";
 RL Int. J. Pept. Protein Res. 4:281-287(1972).
 RN [13]
- RP PROTEIN SEQUENCE OF 27-61 AND 102-124.
 RX MEDLINE=71139765; PubMed=5279046;
 RA Nall H.D.;
- RT "Revised primary structure for human growth hormone.";
 RL Nature New Biol. 230:90-91(1971).
 RN [14]
- RP SEQUENCE REVISION TO 119-120 AND 157-159.
 RX MEDLINE=71153968; PubMed=5279528;
 RA Nall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
 RT "Sequences of pituitary and placental lactogenic and growth hormones:
 RT evolution from a primordial peptide by gene reduplication.";
 RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
 RN [15]
- RP SEQUENCE REVISION.
 RA Nall H.D.;
 RT "The chemistry of the human lactogenic hormones.";
 RL (in) Griffiths K. (eds.);
 RL Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin,
 RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
 RN [16]
- RP PROTEIN SEQUENCE OF 27-79 (ISOFORM 2).
 RX MEDLINE=81117361; PubMed=7462247;
 RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,
 RA Turner C., Cary P.D., Crane-Robinson C.;
 RT "The 20,000 molecular weight variant of human growth hormone.
 RT Preparation and some physical and chemical properties.";
 RL J. Biol. Chem. 256:2395-2401(1981).
 RN [17]
- RP PROTEIN SEQUENCE OF 46-80 (ISOFORM 2).
 RX MEDLINE=80130196; PubMed=7356479;
 RA Lewis U.J., Bonewald L.F., Lewis L.J.;
 RT "The 20,000-dalton variant of human growth hormone: location of the
 RT amino acid deletions.";
 RL Biochem. Biophys. Res. Commun. 92:511-516(1980).
 RN [18]
- RP DEAMINATION OF GLN-163 AND ASN-178.
 RX MEDLINE=82052997; PubMed=7028740;
 RA Lewis U.J., Singh R.N., Bonewald L.F., Seavey B.K.;
 RT "Altered proteolytic cleavage of human growth hormone as a result of
 RT deamidation.";
 RL J. Biol. Chem. 256:11645-11650(1981).
 RN [19]
- RP PHOSPHORYLATION SITES SER-132 AND SER-176.
 RC TISSUE=Pituitary;
 RX PubMed=1997482; DOI=10.1002/jmhc.200300584;
 RA Giorgianni F., Bernova-Giorgianni S., Desiderio D.M.;
 RT "Identification and characterization of phosphorylated proteins in the
 RT human pituitary.";
 RL Proteomics 4:587-598(2004).
 RN [20]
- RP REVIEW.
 RX MEDLINE=99321812; PubMed=10393484; DOI=10.1159/000053128;
 RA Baumann G.;
 RT "Growth hormone heterogeneity in human pituitary and plasma.";
 RL Horm. Res. 51 Suppl. 1:2-6(1999).
 RN [21]
- RP 3D-STRUCTURE MODELING.
 RX MEDLINE=88190073; PubMed=3447173; DOI=10.1002/prot.340020209;
 RA Cohen F.E., Kuntz I.D.;
 RT "Prediction of the three-dimensional structure of human growth
 RT hormone.";
 RL Proteins 2:162-166(1987).
 RN [22]
- RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RX MEDLINE=92196577; PubMed=1549776;
 RA de Vos A.M., Ultsch M., Kosiakoff A.A.;
 RT "Human growth hormone and extracellular domain of its receptor:
 RT crystal structure of the complex.";
 RL Science 255:306-312(1992).
 RN [23]
- RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
 RX MEDLINE=95075462; PubMed=7984244; DOI=10.1038/372478a0;
 RA Somers W., Ultsch M., de Vos A.M., Kosiakoff A.A.;
 RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
 RL Nature 372:478-481(1994).
 RN [24]

RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RA Chancelat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,

Query Match 98.5%; Score 670; DB 1; Length 217;
Best Local Similarity 99.2%; Pred. No. 8e-56;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PFTIPISRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYFPLQNPOTSLSFSSSIP 61
DB 27 PFTIPISRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYFPLQNPOTSLSFSSSIP 86
QY 62 PSNREETQOKSNELRLISILLIQSWLEPVQFLRSVFANSLVYGASDSNYYDLKDLKEEG 121
DB 87 PSNREETQOKSNELRLISILLIQSWLEPVQFLRSVFANSLVYGASDSNYYDLKDLKEEG 146
QY 122 IOTLMGRLEDDGSP 134
DB 147 IOTLMGRLEDDGSP 159

RESULT 2

SOMA_PANTR : STANDARD; PRT; 217 AA.

ID SOMA_PANTR : STANDARD; PRT; 217 AA.
AC P58756;
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth hormone) (Growth hormone 1).
GN Name=GH1;
OS Pan troglodytes (Chimpanzee).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Pan.
OC NCBI_TaxID=9598;
RN NCBI_TaxID=9598;
RP NUCLEOTIDE SEQUENCE.
RA Revol A., Equivel D., Santiago D., Barrera-Saldana H.;
RT "Independent duplication of the growth hormone gene in three Anthropoid lineages."
RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: Plays an important role in growth control. Its major role in stimulating body growth is to stimulate the liver and other tissues to secrete IGF-1. It stimulates both the differentiation and proliferation of myoblasts. It also stimulates amino acid uptake and protein synthesis in muscle and other tissues (By similarity).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC This Swiss-Prot entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL Outstation - the European Bioinformatics Institute. There are no restrictions on its use as long as its content is in no way modified and this statement is not removed.

DR EMBL; AE374232; AAL72284.1; -; Genomic_DNA.
DR HSSP; P01241; 1HMG.
DR SMR; P58756; 27-216.
DR InterPro; IPR012351; Cytokine 4 hlx.
DR InterPro; IPR001400; Somatotropin 1.
DR PANTHER; PTHR11417; Somatotropin 1.
DR Pfam; PF00103; Hormone_1; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 Somatotropin.
FT DISULFID 79 191 By similarity.
FT DISULFID 208 215 By similarity.
SQ SEQUENCE 217 AA; 24843 MW; FEA295DE0518674 CRC64;

Query Match 98.5%; Score 670; DB 1; Length 217;
Best Local Similarity 99.2%; Pred. No. 8e-56;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PFTIPISRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYFPLQNPOTSLSFSSSIP 61
DB 27 PFTIPISRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYFPLQNPOTSLSFSSSIP 86
QY 62 PSNREETQOKSNELRLISILLIQSWLEPVQFLRSVFANSLVYGASDSNYYDLKDLKEEG 121
DB 87 PSNREETQOKSNELRLISILLIQSWLEPVQFLRSVFANSLVYGASDSNYYDLKDLKEEG 146
QY 122 IOTLMGRLEDDGSP 134
DB 147 IOTLMGRLEDDGSP 159

RESULT 3

Q5EB53_HUMAN PRELIMINARY; PRT; 217 AA.

ID Q5EB53_HUMAN PRELIMINARY; PRT; 217 AA.
AC Q5EB53;
DT 10-MAY-2005 (TrEMBLrel. 30, Created)
DT 10-MAY-2005 (TrEMBLrel. 30, Last sequence update)
DT 10-MAY-2005 (TrEMBLrel. 30, Last annotation update)
DE Growth hormone 1, isoform 1.
GN Name=GH1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae; Homo.
OC NCBI_TaxID=9606;
RN NCBI_TaxID=9606;
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pituitary;
RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA Klausner R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D., Altschul S.F., Zeeberg B., Buettow K.H., Schaefer C.F., Bhat N.K., Hopkins R.F., Jordan H., Moore T., Max S.L., Wang J., Hsieh F., Diatchenko L., Marusik A., Farmer A.A., Rubin G.M., Hong L., Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E., Brownstein M.J., Udell T.B., Toshiyuki S., Carninci P., Prange C., Raha S.S., Liguori N.A., Peters G.J., Abramson R.D., Mullaly S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H., Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.D., Huiyk S.W., Vallalath D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A., Fahy J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butlerfield Y.S.N., Krzyzanski M.I., Skalska U., Smalins D.E., Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences."
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [2]
RP NUCLEOTIDE SEQUENCE.
RC TISSUE=Pituitary;
RA Director MGC Project;
RL Submitted (FEB-2005) to the EMBL/GenBank/DBJ databases.
CC -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR EMBL; BC090045; AAH90045.1; -; mRNA.
DR SMR; Q5EB53; 27-216.
DR Ensembl; ENSG00000189162; Homo sapiens.
DR GO; GO:0005576; C:extracellular region; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR012351; Cytokine 4 hlx.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; Hormone_1; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone.

| Seq | SEQUENCE | 217 AA; | 24847 MM; | 72CC15AFAED1C51A | CRC64; |
|---------|-----------------------|--|------------------|------------------|----------------------|
| Qy | Query Match: | 98.5%; | Score 670; | DB 2; | Length 217; |
| - | Best Local Similarity | 99.2%; | Pred. No. 8e-56; | | |
| Matches | 132; | Conservative | 0; | Mismatches | 1; Indels 0; Gaps 0; |
| Qy | 2 | PPTIPLSLFPNAMDRAHRLHQLADVTYQOEPEEAYIIPKEOKKSLFONPOTSLSPESEIPT | 61 | | |
| Db | 27 | FPITIPLSLFPNAMDRAHRLHQLADVTYQOEPEEAYIIPKEOKKSLFONPOTSLSPESEIPT | 86 | | |
| Qy | 62 | PSNREETQOKSNLELIRISLLIIQSMLEPVQFLRSVPANSIYVGSADSNVYDLKDLDEEG | 121 | | |
| Db | 87 | PSNREETQOKSNLELIRISLLIIQSMLEPVQFLRSVPANSIYVGSADSNVYDLKDLDEEG | 146 | | |
| Qy | 122 | IQTLMGRLEDDSP | 134 | | |
| Db | 147 | IQTLMGRLEDDSP | 159 | | |

| RESULT 4 | 061YF1_HUMAN | PRT; | 217 AA. |
|----------|--|------|---------|
| ID | 061YF1_HUMAN PRELIMINARY; | | |
| AC | 061YF1; | | |
| DT | 05-JUL-2004 (TREMBLrel. 27, Created) | | |
| DT | 05-JUL-2004 (TREMBLrel. 27, Last sequence update) | | |
| DT | 05-JUL-2004 (TREMBLrel. 27, Last annotation update) | | |
| DE | Growth hormone 1 variant 1. | | |
| GN | Name=GHI; | | |
| OS | Homo sapiens (Human). | | |
| OC | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; | | |
| OC | Mammalia; Euteria; Euarchontoglires; Primates; Catarrhini; Homnidae; | | |
| OC | Homo. | | |
| NC | NCBI_TaxID=9606; | | |
| RN | [1] | | |
| RP | NUCLEOTIDE SEQUENCE. | | |
| RA | Jorge A.A.L., Arnhold I.J.P., Mendonca B.B.; | | |
| RL | Submitted (APR-2004) to the EMBL/GenBank/DBJ databases. | | |
| CC | -1- SUBCELLULAR LOCATION: Secreted (by similarity). | | |
| DR | EMBL; AY613431; AAT11508.1; --; mRNA. | | |
| DR | HSSP; P01241; 1A22. | | |
| DR | SMR; 061YF1; 27-216. | | |
| DR | Ensembl; ENSG00000189162; Homo sapiens. | | |
| DR | GO; GO:0005576; C:extracellular region; IEA. | | |
| DR | GO; GO:0005179; F:hormone activity; IEA. | | |
| DR | InterPro; IPR012351; Cytokine_4.hlx. | | |
| DR | InterPro; IPR001400; Somatotropin. | | |
| DR | PANTHER; PTHR11417; Somatotropin; 1. | | |
| DR | Pfam; PF00103; Hormone_1; 1. | | |
| DR | PRINTS; PR00836; SOMATOTROPIN. | | |
| DR | PROSITE; PS00266; SOMATOTROPIN_1; 1. | | |
| DR | PROSITE; PS00338; SOMATOTROPIN_2; 1. | | |
| DR | Hormone. | | |
| SQ | SEQUENCE 217 AA; 24875 MW; 12DB1B92F63934D8 CRC64; | | |

| | | | | |
|-----------------------|----------------|--|----------|------------|
| Query Match | 97.9% | Score 666 | DB 2 | Length 217 |
| Best Local Similarity | 98.5% | Pred. No. 1,9e-55 | | |
| Matches 131 | Conservative 0 | Mismatches 2 | Indels 0 | Gaps 0 |
| QY | 2 | FPPTPLSRIPDNAMRARHLHQLADPTYOEFEEAYIPKEOKYSFLONPQTSLSFSESIP | 61 | |
| Db | 27 | FPPTPLSLPFDVMARARHLQADPTYOEFEEAYIPKEOKYSFLONPQTSLSFSESIP | 86 | |
| QY | 62 | PSNRRETOOKSNLELLRISLLIIQSMLEPVQFLRSVFANSLVYGASDSNVYDLKDLDEEG | 121 | |
| Db | 87 | PSNRRETOOKSNLELLRISLLIIQSMLEPVQFLRSVFANSLVYGASDSNVYDLKDLDEEG | 146 | |
| QY | 122 | IQTLMGRLEDDSP | 134 | |
| Db | 147 | IQTLMGRLEDDSP | 159 | |

RESULT 5
Q6IYF0_HUMAN

| ID | Q61YF0_HUMAN PRELIMINARY; PRT; 217 AA. |
|----|---|
| AC | Q61YF0; |
| DT | 05-JUL-2004 (TrEMBLrel. 27, Created) |
| DT | 05-JUL-2004 (TrEMBLrel. 27, last sequence update) |
| DT | 05-JUL-2004 (TrEMBLrel. 27, last annotation update) |
| DE | Growth hormone 1 variant 2. |

OC Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominiidae;
OC Homo.
OX NCBI_TaxID=9606;
RX [1]
RP NUCLEOTIDE SEQUENCE.
RA vojce A.A.L., Arnold I.J.P., Mendonca B.B.;
RL Submitted (APR-2004) to the EMBL/Genbank/DBJ databases.
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
DR EMBL; AY613432; AAT11509.1; -, mRNA.
DR HSSP; P01241; IAXI.
DR SMR; O61YF0; 27-216.
DR Ensembl; ENSG00000189162; Homo sapiens.
DR GO; GO:0005576; C:extracellular region; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR InterPro; IPR012351; Cytokine_4_hlx.
DR InterPro; IPR001400; Somatotropin.
DR PANTHER; PTHR11417; Somatotropin; 1.
DR Pfam; PF00103; Hormone_1; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone.
SQ Sequence 217 AA; 24946 MW; 720079DF52BDB51A CRC64;

| | | | | |
|-----------------------|----------------|--|----------|------------|
| Query Match | 97.4% | Score 662 | DB 2 | Length 217 |
| Best Local Similarity | 96.5% | Pred. No. 4.7e-55 | | |
| Matches 131 | Conservative 0 | Mismatches 2 | Indels 0 | Gaps 0 |
| QY | 2 | PPTPLSRFLPNAMLRARHLHQLAFDTYOEFEEBAYIPKQKXSYFLQNPQTSISFBSBSP | 61 | |
| DB | 27 | PPTPLPLSLFPNAMLRAHRLHQLAFDTYOEFEEBAYIPKQKXSYFLQNPQTSISFBSBSP | 86 | |
| QY | 62 | PSNRRETOQKNSLILRLISLLILQSGWLEPVQFLSVFANSILVYGASDSNVYDLDLKDLSRG | 121 | |
| DB | 87 | PSNRRETOQKNSLILRLISLLILQSGWLEPVQFLSVFANSILVYGASDSNVYDLDLKEEG | 146 | |
| QY | 122 | IOTLMGRLEDGSP | 134 | |
| DB | 147 | IOTLMRRLLEDGSP | 159 | |

| | RESULT 6 | |
|-------------------|---|--------------|
| ID | Q4VUJ1_PYGRO | |
| AC | Q4VUJ1_PYGRO PRELIMINARY; | PRT, 217 AA. |
| DT | 13-SEP-2005 (TREMBLrel. 31, Created) | |
| DT | 13-SEP-2005 (TREMBLrel. 31, Last sequence update) | |
| DT | 13-SEP-2005 (TREMBLrel. 31, Last annotation update) | |
| DE | Growth hormone-like protein 1. | |
| OS | Pygathrix hoseiiana (Golden snub-nosed monkey). | |
| OC | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; | |
| OC | Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; | |
| OC | Cercopithecoidea; Colobinae; Pygathrix. | |
| NCBI_TaxID=61622; | | |
| OK | [1] | |
| RN | NUCLEOTIDE SEQUENCE. | |
| RP | PuMed=15848116; DOI=10.1016/j.gene.2005.03.003; | |
| RX | Ye C., Li Y., Shi P., Zhang Y.P.; | |
| RA | "Molecular evolution of growth hormone gene family in old world | |
| RT | monkeys and hominoids."; | |
| RL | Gene 350:183-192(2005).. | |
| CC | -1- SUBCELLULAR LOCATION: Secreted (By similarity). | |
| CC | EMBL; AY621647; AAU95549.1; -; Genomic DNA. | |
| DR | Interpro; IPR012351; Cytokine_4_hlx. | |

InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; Hormone_1; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 DR Hormone.
 KM
 SQ SEQUENCE 217 AA; 24861 MW; 914DS85BDB20AF5 CRC64;

Query Match 97.2%; Score 661; DB 2; Length 217;
 Best Local Similarity 97.7%; Pred. No. 5.8e-55;
 Matches 130; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESPT 61
 DB 27 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESPT 86
 QY 62 PSNNEETQOKSNLELRISILLIQSWLEPVQFLRSVANSIVYGASDSNVYDLKDLBEG 121
 DB 87 PSNNEETQOKSNLELRISILLIQSWLEPVQFLRSVANSIVYGTSDDVYDLKDLBEG 146
 QY 122 IQLTMRLEDDGSP 134
 DB 147 IQLTMRLEDDGSP 159

RESULT 7
 Q4VUK0_HYLL PRELIMINARY; PRT; 217 AA.
 ID Q4VUK0_HYLL PRELIMINARY; PRT; 217 AA.

AC Q4VUK0;
 DT 13-SEP-2005 (TREMBLERL. 31, Created)
 DT 13-SEP-2005 (TREMBLERL. 31, Last sequence update)
 DT 13-SEP-2005 (TREMBLERL. 31, Last annotation update)
 DE Growth hormone-like protein 3.
 OS Hylobates leucogenys (White-cheeked gibbon).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
 OC Hylobatidae; Nomascus.
 OX NCBI_TaxId=61853;
 RN
 RP NCLOTIDE SEQUENCE.
 RX PubMed=15848116; DOI=10.1016/j.gene.2005.03.003;
 RA Ye C., Li Y., Shi P., Zhang Y.P.;
 RT "Molecular evolution of growth hormone gene family in old world
 monkeys and hominoids.";
 RL Gene 350:183-192(2005).
 CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
 DR EMBL; AY621637; AU95540.1; -; Genomic_DNA.
 DR InterPro; IPR012351; Cytokine_4_hlx.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; Hormone_1; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
 KM Hormone.
 SQ SEQUENCE 217 AA; 24794 MW; 0C4DD104D007D82C CRC64;

Query Match 97.1%; Score 660; DB 2; Length 217;
 Best Local Similarity 97.7%; Pred. No. 7.3e-55;
 Matches 130; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

QY 2 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESPT 61
 DB 27 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESPT 86
 QY 62 PSNNEETQOKSNLELRISILLIQSWLEPVQFLRSVANSIVYGASDSNVYDLKDLBEG 121
 DB 87 PSNNEETQOKSNLELRISILLIQSWLEPVQFLRSVANSIVYGASDSNVYDLTDLBEG 146
 QY 122 IQLTMRLEDDGSP 134
 DB 147 IQLTMRLEDDGSP 159

RESULT 8
 Q4VU03_PYGNE PRELIMINARY; PRT; 217 AA.
 ID Q4VU03_PYGNE PRELIMINARY; PRT; 217 AA.

AC Q4VU03;
 DT 13-SEP-2005 (TREMBLERL. 31, Created)
 DT 13-SEP-2005 (TREMBLERL. 31, Last sequence update)
 DT 13-SEP-2005 (TREMBLERL. 31, Last annotation update)
 DE Growth hormone-like protein 2.
 OS Pygathrix nemaeus (Dove langur) (Douc langur).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
 OC Cercopithecoidea; Colobinae; Pygathrix.
 OX NCBI_TaxId=54133;
 RN
 RP NCLOTIDE SEQUENCE.
 RX PubMed=15848116; DOI=10.1016/j.gene.2005.03.003;
 RA Ye C., Li Y., Shi P., Zhang Y.P.;
 RT "Molecular evolution of growth hormone gene family in old world
 monkeys and hominoids.";
 RL Gene 350:183-192(2005).
 CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
 DR EMBL; AY621643; AU95546.1; -; Genomic_DNA.
 DR InterPro; IPR012351; Cytokine_4_hlx.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; Hormone_1; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KM Hormone.
 SQ SEQUENCE 217 AA; 25022 MW; 6308E804DA80620B CRC64;

Query Match 96.5%; Score 656; DB 2; Length 217;
 Best Local Similarity 97.0%; Pred. No. 1.8e-54;
 Matches 129; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 2 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESPT 61
 DB 27 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSESPT 86
 QY 62 PSNNEETQOKSNLELRISILLIQSWLEPVQFLRSVANSIVYGASDSNVYDLKDLBEG 121
 DB 87 PSNNEETQOKSNLELRISILLIQSWLEPVQFLRSVANSIVYGTSDDVYDLKDLBEG 146
 QY 122 IQLTMRLEDDGSP 134
 DB 147 IQLTMRLEDDGSP 159

RESULT 9
 Q4VU03_PYGNE PRELIMINARY; PRT; 217 AA.
 ID Q4VU03_PYGNE PRELIMINARY; PRT; 217 AA.

AC Q4VU03;
 DT 13-SEP-2005 (TREMBLERL. 31, Created)
 DT 13-SEP-2005 (TREMBLERL. 31, Last sequence update)
 DT 13-SEP-2005 (TREMBLERL. 31, Last annotation update)
 DE Growth hormone-like protein 4.
 OS Pygathrix nemaeus (Dove langur) (Douc langur).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
 OC Cercopithecoidea; Colobinae; Pygathrix.
 OX NCBI_TaxId=54133;
 RN
 RP NCLOTIDE SEQUENCE.
 RX PubMed=15848116; DOI=10.1016/j.gene.2005.03.003;
 RA Ye C., Li Y., Shi P., Zhang Y.P.;
 RT "Molecular evolution of growth hormone gene family in old world
 monkeys and hominoids.";
 RL Gene 350:183-192(2005).
 CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
 DR EMBL; AY621645; AU95547.1; -; Genomic_DNA.
 DR InterPro; IPR012351; Cytokine_4_hlx.
 DR InterPro; IPR001400; Somatotropin.
 DR Pfam; PF00103; Hormone_1; 1.

```

DR PRINTS; PRO0836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
PR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KM Hormone.
SQ SEQUENCE 217 AA; 24815 MW; FA9B3EDDB10FE674 CRC64;

Query Match 96.5%; Score 656; DB 2; Length 217;
Best Local Similarity 97.0%; Pred. No. 1.8e-54;
Matches 129; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNAMLRAHRLHQLAFPTYQFEFEAYIPKQKYSFLQNPQTSLSFSSESIP 61
DB 27 PPTPLSLRFDNAMLRAHRLHQLAFPTYQFEFEAYIPKQKYSFLQNPQTSLSFSSESIP 86
QY PSNREETOQKSNLELRISILLIOSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
DB 87 PSNREETOQKSNLELRISILLIOSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 146
QY 122 IOTLMGRLEDDSP 134
DB 147 IOTLMGRLEDDSP 159

RESULT 10
Q4VUK1_HYLL PRELIMINARY; PRT; 217 AA.
ID Q4VUK1_HYLL
AC Q4VUK1;
DT 13-SEP-2005 (TRENBLREL.31, Created)
DT 13-SEP-2005 (TRENBLREL.31, Last sequence update)
DT 13-SEP-2005 (TRENBLREL.31, Last annotation update)
DE Growth hormone-like protein 2.
OS Hylobates leucogenys (White-cheeked gibbon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
OC Hylobatidae; Nomascus.
OX NCBI_TaxID=61853;
RN [1]
NP NUCLEOTIDE SEQUENCE.
RX PubMed=15848116; DOI=10.1016/j.gene.2005.03.003;
RA Ye C., Li Y., Shi P., Zhang Y.P.;
RT "Molecular evolution of growth hormone gene family in old world
RT monkeys and hominoids.";
RL Gene 350:183-192(2005).
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
DR EMBL; AY621636; AAU95539.1; -; Genomic_DNA.
DR InterPro; IPR012351; Cytokine_4_hlx.
DR InterPro; IPR001400; Somatotropin.
DR Pfam; PF00103; Hormone_1; 1.
DR PRINTS; PRO0836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KM Hormone.
SQ SEQUENCE 217 AA; 24812 MW; 6A5C12409B666DE CRC64;

Query Match 96.3%; Score 655; DB 2; Length 217;
Best Local Similarity 97.0%; Pred. No. 2.2e-54;
Matches 129; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNAMLRAHRLHQLAFPTYQFEFEAYIPKQKYSFLQNPQTSLSFSSESIP 61
DB 27 PPTPLSLRFDNAMLRAHRLHQLAFPTYQFEFEAYIPKQKYSFLQNPQTSLSFSSESIP 86
QY PSNREETOQKSNLELRISILLIOSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
DB 87 PSNREETOQKSNLELRISILLIOSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 146
QY 122 IOTLMGRLEDDSP 134
DB 147 IOTLMGRLEDDSP 159

RESULT 11
SOMA_MACMU

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ID SOMA_MACMU STANDARD; PRT; 217 AA.
AC P33093;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth
DE hormone) (Growth hormone 1).
GN Name=GH1;
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
OC Cercopithecoidea; Cercopithecinae; Macaca.
OX NCBI_TaxID=9544;
RN [1]
NP NUCLEOTIDE SEQUENCE.
RX MEDLINE=94008724; PubMed=8404617; DOI=10.1210/en.133.4.1744;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomammotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
RN [2]
RP PROTEIN SEQUENCE OF 27-217.
RX MEDLINE=86129460; PubMed=3080959;
RA Li C.H., Chung D., Lahn H.W., Stein S.;
RT "The primary structure of monkey pituitary growth hormone.";
RL Arch. Biochem. Biophys. 245:287-291(1986).
CC -1- FUNCTION: Plays an important role in growth control. Its major
CC role in stimulating body growth is to stimulate the liver and
CC other tissues to secrete IGF-1. It stimulates both the
CC differentiation and proliferation of myoblasts. It also stimulates
CC amino acid uptake and protein synthesis in muscle and other
CC tissues.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC
CC This Swiss-Prot entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use as long as its content is in no way modified and this statement is not
CC removed.
CC -----
CC EMBL; L16556; AAA18842.1; -; mRNA.
CC PIR; I67410; I67410.
CC DR HSSP; P01241; IAXI.
CC SMR; P33093; 27-216.
CC DR InterPro; IPR012351; Cytokine_4_hlx.
CC InterPro; IPR001400; Somatotropin.
CC PANTHER; PTHR11417; Somatotropin_1.
CC Pfam; PF00103; Hormone_1; 1.
CC PRINTS; PRO0836; SOMATOTROPIN.
CC PROSITE; PS00266; SOMATOTROPIN_1; 1.
CC PROSITE; PS00338; SOMATOTROPIN_2; 1.
KM Direct protein sequencing; Hormone; Pituitary; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 Somatotropin.
FT DISULFID 79 191 By similarity.
FT DISULFID 208 215 By similarity.
FT CONFLICT 100 100 E -> Q (in Ref. 2).
FT CONFLICT 179 179 N -> D (in Ref. 2).
SQ SEQUENCE 217 AA; 24913 MW; 2C5180341BEC46D0 CRC64;

Query Match 94.9%; Score 645; DB 1; Length 217;
Best Local Similarity 97.0%; Pred. No. 2e-53;
Matches 128; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNAMLRAHRLHQLAFPTYQFEFEAYIPKQKYSFLQNPQTSLSFSSESIP 61
DB 27 PPTPLSLRFDNAMLRAHRLHQLAFPTYQFEFEAYIPKQKYSFLQNPQTSLSFSSESIP 86
QY PSNREETOQKSNLELRISILLIOSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
DB 87 PSNREETOQKSNLELRISILLIOSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 146

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QY      122  IOTLMGRLEDDGS 133
Db      147  IOTLMGRLEDDGS 158

RESULT 12
QAVU6_HYLLB
ID QAVU6_HYLLB PRELIMINARY; PRT; 217 AA.
AC QAVU6;
DT 13-SEP-2005 (TREMBLrel. 31, Created)
DT 13-SEP-2005 (TREMBLrel. 31, Last sequence update)
DE Growth hormone-like protein 7.
OS Hylobates leucogenys (White-cheeked gibbon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
OC Hylobatidae; Nomascus.
OX NCBI_TaxID=61853;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RX PubMed=15848116; DOI=10.1016/j.gene.2005.03.003;
RA Ye C., Li Y., Shi P., Zhang Y.P.;
RT "Molecular evolution of growth hormone gene family in old world
   monkeys and hominoids.";
RL Gene 350:183-192(2005).
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
DR EMBL; AY621641; AA095544.1; -; Genomic DNA.
DR Interpro; IPR012351; Cytokine_4_hlx.
DR Interpro; IPR001400; Somatotropin.
DR Pfam; PF00103; Hormone_1; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Hormone.
SQ SEQUENCE 217 AA; 24882 MW; 5EAA2D06469DD6D7 CRC64;

Query Match 92.2%; Score 627; DB 2; Length 217;
Best Local Similarity 94.0%; Pred. No. 1e-51;
Matches 125; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

QY      2  FPTPLSRLEFDNMLRAHRLHQLAFPTQGFEEAYIPKEOKYSPFLONPOTSLSPSESIP 61
Db      27  FPTPLSRLEFDNMLRAHRLHQLAFPTQGFEEAYIPKEOKYSPFLONPOTSLSPSESIP 86
QY      62  PSNRRETOQKSNLELRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLDEG 121
Db      87  PSNRVKTQKSNLELRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYHMLKDLDEG 146
QY      122 IOTLMGRLEDDGS 134
Db      147 IOTLMGRLEDDGS 159

RESULT 13
Q8WNE0_ATEGE
ID Q8WNE0_ATEGE PRELIMINARY; PRT; 217 AA.
AC Q8WNE0;
DT 01-MAR-2002 (TREMBLrel. 20, Created)
DT 01-MAR-2002 (TREMBLrel. 20, Last sequence update)
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)
DE Growth hormone.
OS Ateles geoffroyi (Black-handed spider monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Platyrrhini; Cebidae;
OC Ateleinae; Ateles.
OX NCBI_TaxID=9509;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;
RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).

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DR EMBL; AF374234; AAL72286.1; -; Genomic DNA.
DR HSSP; P01241; 1A22.
DR SMR; Q8WNE0; 27-216.
DR GO; GO:0005576; C:extracellular region; IEA.
DR GO; GO:0005179; F:hormone activity; IEA.
DR Interpro; IPR012351; Cytokine_4_hlx.
DR Interpro; IPR001400; Somatotropin.
DR PANTHER; PTHR11417; Somatotropin; 1.
DR Pfam; PF00103; Hormone_1; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone.
SQ SEQUENCE 217 AA; 24894 MW; 425829FF41EEAA6 CRC64;

Query Match 91.8%; Score 624; DB 2; Length 217;
Best Local Similarity 91.0%; Pred. No. 2e-51;
Matches 121; Conservative 7; Mismatches 5; Indels 0; Gaps 0;

QY      2  FPTPLSRLEFDNMLRAHRLHQLAFPTQGFEEAYIPKEOKYSPFLONPOTSLSPSESIP 61
Db      27  FPTPLSRLEFDNMLRAHRLHQLAFPTQGFEEAYIPKEOKYSPFLONPOTSLSPSESIP 86
QY      62  PSNRRETOQKSNLELRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLDEG 121
Db      87  PSNRRETOQKSNLELRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLDEG 146
QY      122 IOTLMGRLEDDGS 134
Db      147 IOTLMGRLEDDGS 159

RESULT 14
SOWA_CALYA
ID SOWA_CALYA STANDARD; PRT; 217 AA.
AC Q9GMB3;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN Name=GH1;
OS Callithrix jacchus (Common marmoset).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Platyrrhini;
OC Callitrichidae; Callitrich.
OX NCBI_TaxID=9483;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RA Wallis O.C., Wallis M.;
RT "Cloning and characterization of a putative growth hormone encoding
   RT gene from the marmoset (Callithrix jacchus).";
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: Plays an important role in growth control. Its major
   role in stimulating body growth is to stimulate the liver and
   other tissues to secrete IGF-1. It stimulates both the
   differentiation and proliferation of myoblasts. It also stimulates
   amino acid uptake and protein synthesis in muscle and other
   tissues (By similarity).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC This Swiss-Prot entry is copyright. It is produced through a collaboration
   between the Swiss Institute of Bioinformatics and the EMBL outstation -
   the European Bioinformatics Institute. There are no restrictions on its
   use as long as its content is in no way modified and this statement is not
   removed.
DR EMBL; AJ297563; GAC03481.1; -; Genomic DNA.
DR HSSP; P01241; 1A22.
DR SMR; Q9GMB3; 27-216.
DR Interpro; IPR012351; Cytokine_4_hlx.
DR Interpro; IPR001400; Somatotropin.
DR PANTHER; PTHR11417; Somatotropin; 1.

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DR Pfam; PF00103; Hormone 1; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN 1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KM Hormone; Pictuary; Signal.
 FT SIGNAL 1 26 By similarity.
 FT CHAIN 27 217 Somatotropin.
 FT DISULFID 79 191 By similarity.
 FT DISULFID 208 215 By similarity.
 SQ SEQUENCE 217 AA; 24960 MW; E102151A12CE6192 CRC64;

Query Match 91.3%; Score 621; DB 1; Length 217;
 Best Local Similarity 90.2%; Pred. No. 3.9e-51;
 Matches 120; Conservative 8; Mismatches 5; Indels 0; Gaps 0;

QY 2 PPTPLSRLEFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKSFLONPOTSLSPSSISPT 61
 |||||
 DB 27 PPTPLSRLEFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKSFLONPOTSLSPSSISPT 86
 |||||

QY 62 PSNRRETOQKSNLELLRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLLEG 121
 |||||
 DB 87 PSNRRETOQKSNLELLRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLLEG 146
 |||||

QY 122 IOTLMGRLEDPSP 134
 |||||
 DB 147 IOTLMGRLEDPSP 159
 |||||

RESULT 15
 SOM2_PANTR STANDARD; PRT; 217 AA.
 ID SOM2_PANTR STANDARD; PRT; 217 AA.
 AC P58757;
 DT 28-FEB-2003 (Rel. 41, Created)
 DT 28-FEB-2003 (Rel. 41, Last sequence update)
 DT 10-MAY-2005 (Rel. 47, Last annotation update)
 DE Growth hormone variant precursor (GH-V) (Placenta-specific growth hormone) (Growth hormone 2).
 GN Name=GH2;
 OS Pan troglodytes (Chimpanzee).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Homiidae; Pan.
 OC NCBI_TaxID=9598;
 RX [1]
 RP NUCLEOTIDE SEQUENCE.
 RA Revol A., Esquivel D., Barrera-Saldana H.;
 RT "Independent duplication of the growth hormone gene in three Anthropoides lineages.";
 RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
 CC -1- FUNCTION: Plays an important role in growth control. Its major role in stimulating body growth is to stimulate the liver and other tissues to secrete IGF-1. It stimulates both the differentiation and proliferation of myoblasts. It also stimulates amino acid uptake and protein synthesis in muscle and other tissues.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- TISSUE SPECIFICITY: Expressed in the placenta.
 CC -1- SIMILARITY: Belongs to the somatotropin/prolactin family.

CC This Swiss-Prot entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use as long as its content is in no way modified and this statement is not removed.

CC EMBL; AJ374233; AAL72285.1; -; Genomic_DNA.
 CC HSSP; P01241; 1A22.
 CC SWR; P58757; 27-216.
 CC InterPro; IPR012351; Cytokine_4_hlx.
 CC InterPro; IPR001400; Somatotropin.
 CC PANTHER; PTHR11417; Somatotropin 1.
 CC Pfam; PF00103; Hormone_1; 1.
 CC PRINTS; PR00836; SOMATOTROPIN.

DR PROSITE; PS00266; SOMATOTROPIN 1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 KM Glycoprotein; Hormone; Placenta; Signal.
 FT SIGNAL 1 26 By similarity.
 FT CHAIN 27 217 Growth hormone variant.
 FT CARBOHYD 166 166 N-linked (GlcNAc...) (Potential).
 FT DISULFID 79 191 By similarity.
 FT DISULFID 208 215 By similarity.
 SQ SEQUENCE 217 AA; 24991 MW; 1592A429075677DE CRC64;

Query Match 89.9%; Score 611; DB 1; Length 217;
 Best Local Similarity 92.5%; Pred. No. 3.5e-50;
 Matches 123; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 2 PPTPLSRLEFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKSFLONPOTSLSPSSISPT 61
 |||||
 DB 27 PPTPLSRLEFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKSFLONPOTSLSPSSISPT 86
 |||||

QY 62 PSNRRETOQKSNLELLRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLLEG 121
 |||||
 DB 87 PSNRRETOQKSNLELLRISILLIQSWLEPVQFLRSVPANSLVYGASDSNVYDLKDLLEG 146
 |||||

QY 122 IOTLMGRLEDPSP 134
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 DB 147 IOTLMGRLEDPSP 159
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Search completed: May 11, 2006, 12:01:35
 Job time : 229 secs

GenCore version 5.1.8
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OM protein - protein search, using sw model

Run on: May 11, 2006, 12:01:56 ; Search time 46 Seconds
(Without alignments)
240.838 Million cell updates/sec

Title: US-10-714-067-24

Perfect score: 680
Sequence: 1 MFPTPLSRFDNMLRAHR.....LKDLEGIQTLWGLRLEGGSP 134

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :
1: /cgn2_6/ptodata/1/1aa/5 COMB.pep:*
2: /cgn2_6/ptodata/1/1aa/6 COMB.pep:*
3: /cgn2_6/ptodata/1/1aa/H COMB.pep:*
4: /cgn2_6/ptodata/1/1aa/PCBUS COMB.pep:*
5: /cgn2_6/ptodata/1/1aa/RB COMB.pep:*
6: /cgn2_6/ptodata/1/1aa/backfile1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|--------------------------------------|
| 1 | 675 | 99.3 | 192 | 1 | US-08-093-383-1 Sequence 1, Appli |
| 2 | 670 | 98.5 | 190 | 2 | US-09-571-0248-14 Sequence 14, Appli |
| 3 | 670 | 98.5 | 191 | 2 | US-09-284-878-5 Sequence 5, Appli |
| 4 | 670 | 98.5 | 191 | 2 | US-09-462-941-1 Sequence 1, Appli |
| 5 | 670 | 98.5 | 191 | 2 | US-09-554-451-1 Sequence 1, Appli |
| 6 | 670 | 98.5 | 194 | 1 | US-08-383-621-4 Sequence 4, Appli |
| 7 | 670 | 98.5 | 194 | 2 | US-08-459-906-4 Sequence 4, Appli |
| 8 | 670 | 98.5 | 217 | 2 | US-08-589-028-10 Sequence 10, Appli |
| 9 | 670 | 98.5 | 217 | 2 | US-08-784-582-10 Sequence 10, Appli |
| 10 | 670 | 98.5 | 217 | 2 | US-08-785-271-10 Sequence 10, Appli |
| 11 | 670 | 98.5 | 217 | 2 | US-08-759-628-11 Sequence 11, Appli |
| 12 | 670 | 98.5 | 217 | 2 | US-09-284-878-1 Sequence 1, Appli |
| 13 | 670 | 98.5 | 217 | 2 | US-09-929-918-9 Sequence 9, Appli |
| 14 | 670 | 98.5 | 217 | 2 | US-09-571-0248-1 Sequence 1, Appli |
| 15 | 670 | 98.5 | 241 | 2 | US-09-424-6208-25 Sequence 25, Appli |
| 16 | 670 | 98.5 | 245 | 2 | US-09-280-030-66 Sequence 66, Appli |
| 17 | 670 | 98.5 | 274 | 2 | US-08-784-582-71 Sequence 71, Appli |
| 18 | 670 | 98.5 | 360 | 2 | US-08-784-582-73 Sequence 73, Appli |
| 19 | 670 | 98.5 | 448 | 2 | US-09-916-229A-2 Sequence 2, Appli |
| 20 | 664 | 97.6 | 191 | 2 | US-09-465-461-1 Sequence 1, Appli |
| 21 | 664 | 97.6 | 217 | 1 | US-08-187-756C-4 Sequence 4, Appli |
| 22 | 664 | 97.6 | 217 | 1 | US-08-469-486-51 Sequence 51, Appli |
| 23 | 664 | 97.6 | 217 | 1 | US-08-468-658-51 Sequence 51, Appli |
| 24 | 664 | 97.6 | 217 | 1 | US-08-710-324A-4 Sequence 4, Appli |
| 25 | 664 | 97.6 | 217 | 2 | US-09-411-657-4 Sequence 4, Appli |
| 26 | 663 | 97.5 | 344 | 2 | US-10-048-882C-9 Sequence 9, Appli |
| 27 | 663 | 97.5 | 400 | 2 | US-09-420-819-37 Sequence 37, Appli |

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|----|-------|------|-----|---|--------------------------------------|
| 28 | 663 | 97.5 | 401 | 2 | US-09-420-819-36 Sequence 36, Appli |
| 29 | 660 | 97.1 | 191 | 2 | US-09-554-451-3 Sequence 3, Appli |
| 30 | 657 | 96.6 | 191 | 2 | US-08-800-215C-18 Sequence 18, Appli |
| 31 | 657 | 96.6 | 191 | 2 | US-09-571-024B-4 Sequence 4, Appli |
| 32 | 655 | 96.3 | 191 | 2 | US-08-800-215C-16 Sequence 16, Appli |
| 33 | 655 | 96.3 | 191 | 2 | US-08-800-215C-20 Sequence 20, Appli |
| 34 | 651 | 95.7 | 191 | 2 | US-09-571-024B-5 Sequence 5, Appli |
| 35 | 644 | 94.7 | 191 | 2 | US-09-571-024B-6 Sequence 6, Appli |
| 36 | 642 | 94.4 | 191 | 2 | US-09-571-024B-3 Sequence 3, Appli |
| 37 | 637.5 | 93.8 | 242 | 2 | US-09-949-016-8660 Sequence 8660, Ap |
| 38 | 637.5 | 93.8 | 242 | 2 | US-09-949-016-8661 Sequence 8661, Ap |
| 39 | 637.5 | 93.8 | 242 | 2 | US-09-949-016-8662 Sequence 8662, Ap |
| 40 | 637.5 | 93.8 | 242 | 2 | US-09-949-016-8663 Sequence 8663, Ap |
| 41 | 637.5 | 93.8 | 242 | 2 | US-09-949-016-8664 Sequence 8664, Ap |
| 42 | 633 | 93.1 | 198 | 2 | US-09-949-016-8650 Sequence 8650, Ap |
| 43 | 633 | 93.1 | 198 | 2 | US-09-949-016-8651 Sequence 8651, Ap |
| 44 | 633 | 93.1 | 198 | 2 | US-09-949-016-8652 Sequence 8652, Ap |
| 45 | 633 | 93.1 | 198 | 2 | US-09-949-016-8653 Sequence 8653, Ap |

ALIGNMENTS

RESULT 1
US-08-093-383-1
Sequence 1, Application US/08093383
Patent No. 5485529
GENERAL INFORMATION:
APPLICANT: DeBoer, Herman A.
APPLICANT: Heyneker, Herbert L.
APPLICANT: Seeburg, Peter H.
TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone
NUMBER OF SEQUENCES: 30
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94060
COMPUTER READABLE FORM:
MEDIUM TYPE: 5.25 Inch, 360 Kb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: patin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/093,383
FILING DATE: 14-JUL-1993
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/619827
FILING DATE: 28-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/198824
FILING DATE: 05-APR-1988
APPLICATION NUMBER: 06/632361
FILING DATE: 19-JUL-1984
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 06/303687
FILING DATE: 18-SEP-1981
ATTORNEY/AGENT INFORMATION:
NAME: Johnston, Sean A.
REGISTRATION NUMBER: P35,910
REFERENCE/DOCKET NUMBER: 46C4
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415/225-3562
TELEFAX: 415/952-9881
TELEX: 910/371-7168
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
TYPE: amino acid


```

; ADDRESSEE: Pillsbury Winthrop, L.L.P.
; STREET: 1100 New York Ave., N.W.
; CITY: Washington
; STATE: D.C.
; COUNTRY: U.S.A.
; ZIP: 20005
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: MS word
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/554,451
; FILING DATE: 15-May-2000
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/GB98/03449
; FILING DATE: No. 6680207ember 16, 1998
; APPLICATION NUMBER: GB 972395.2
; FILING DATE: No. 6680207ember 14, 1997
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 191 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-09-554-451-1

Query Match      98.5%; Score 670; DB 2; Length 191;
Best Local Similarity 99.2%; Pred. No. 3.4e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY      2 PPTPLSRFLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSEIPT 61
DB      1 PPTPLSRFLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSEIPT 60
QY      62 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFNANSLVYGASDSNVYDLKDLDEEG 121
DB      61 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFNANSLVYGASDSNVYDLKDLDEEG 120
QY      122 IQTLMGRLDGGSP 134
DB      121 IQTLMGRLDGGSP 133

RESULT 6
US-08-383-621-4
; Sequence 4, Application US/08383621
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.
; TITLE OF INVENTION: Stabilization Of Somatotropins And Other
; TITLE OF INVENTION: Proteins By Modification Of Cysteine Residues
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: Dr. Estelle J. Tsevdos
; STREET: 1937 West Main Street, P.O. Box 60
; CITY: Stamford
; STATE: Connecticut
; COUNTRY: U.S.A.
; ZIP: 06904-0060
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
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; APPLICATION NUMBER: US/08/383,621
; FILING DATE: 06-FEB-1995
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/766,142
; FILING DATE: 25-SEP-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Tsevdos, Estelle J.
; REGISTRATION NUMBER: 31,145
; REFERENCE/DOCKET NUMBER: 31,278-01
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 203-321-2756
; TELEFAX: 203-321-2971
; TELEX: 203-710-474-4059
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 194 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-383-621-4

Query Match      98.5%; Score 670; DB 1; Length 194;
Best Local Similarity 99.2%; Pred. No. 3.5e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY      2 PPTPLSRFLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSEIPT 61
DB      4 PPTPLSRFLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSEIPT 63
QY      62 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFNANSLVYGASDSNVYDLKDLDEEG 121
DB      64 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFNANSLVYGASDSNVYDLKDLDEEG 123
QY      122 IQTLMGRLDGGSP 134
DB      124 IQTLMGRLDGGSP 136

RESULT 7
US-08-459-906-4
; Sequence 4, Application US/08459906
; Patent No. 6010999
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.
; TITLE OF INVENTION: Stabilization Of Somatotropins And Other
; TITLE OF INVENTION: Proteins by Modification Of Cysteine Residues
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: American Cyanamid Company
; STREET: One Cyanamid Plaza
; CITY: Wayne
; STATE: New Jersey
; COUNTRY: U.S.A.
; ZIP: 07470-8426
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/459,906
; FILING DATE: 02-JUN-1995
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Webster, Darryl L.
; REGISTRATION NUMBER: 34,276
; REFERENCE/DOCKET NUMBER: 31,278-03
```

TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-3247
TELEFAX: 201-831-3305
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 194 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-459-906-4

Query Match 98.5%; Score 670; DB 2; Length 194;
Best Local Similarity 99.2%; Pred. No. 3.5e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIKKQKYSFLQNPQTSLSFSES IPT 61
DB 4 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIKKQKYSFLQNPQTSLSFSES IPT 63

QY 62 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLBEG 121
DB 64 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLBEG 123

QY 122 IQTLMGRLBEGSP 134
DB 124 IQTLMGRLBEGSP 136

RESULT 8
US-08-589-028-10
Sequence 10, Application US/08589028
Patent No. 6087129
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe
APPLICANT: No. 6087123mington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thijsen, Anice E.
APPLICANT: Quade, Christian
APPLICANT: Kruse, Fred
TITLE OF INVENTION: Recombinant Expression of Proteins From
NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P. O. Box 4433
CITY: Houston
STATE: TX
COUNTRY: USA
ZIP: 77210-4433
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: 19-JAN-1996
APPLICATION NUMBER: US/08/589,028
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 47,642
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-589-028-10

Query Match 98.5%; Score 670; DB 2; Length 217;
Best Local Similarity 99.2%; Pred. No. 4.1e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIKKQKYSFLQNPQTSLSFSES IPT 61
DB 27 PPTPLSLRFDNMLRAHRLHQLAFDTYQEFEEAYIKKQKYSFLQNPQTSLSFSES IPT 86

QY 62 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLBEG 121
DB 87 PSNREETOQKSNLELRISLLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLBEG 146

QY 122 IQTLMGRLBEGSP 134
DB 147 IQTLMGRLBEGSP 159

RESULT 9
US-08-784-582-10
Sequence 10, Application US/08784582
Patent No. 6110707
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe A.
APPLICANT: No. 6110707mington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thijsen, Anice E.
APPLICANT: Quade, Christian
APPLICANT: Kruse, Fred
APPLICANT: McGarry, Dennis
TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
CITY: Houston
STATE: Texas
COUNTRY: USA
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: 19-JAN-1996
APPLICATION NUMBER: US/08/784,582
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-784-582-10

Query Match 98.5%; Score 670; DB 2; Length 217;
Best Local Similarity 99.2%; Pred. No. 4.1e-71;

Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES1PT 61
Db 27 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES1PT 86

QY 62 PSNREETOQKSNLELRLISLLIQSWLEPVQFLRSVFANSIVGASDSNVYDLKDLLEG 121
Db 87 PSNREETOQKSNLELRLISLLIQSWLEPVQFLRSVFANSIVGASDSNVYDLKDLLEG 146

QY 122 IOTLMGRLEDGSP 134
Db 147 IOTLMGRLEDGSP 159

RESULT 10
US-08-785-271-10
; Sequence 10, Application US/08785271
; Patent No. 6194176
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6194176/Ingleton, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Alice E.
; APPLICANT: Quade, Christian
; APPLICANT: Kruse, Fred
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P.O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent in Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/785,271
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/589,028
; FILING DATE: 19-JAN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 37,642
; REFERENCE/DOCKET NUMBER: UTSD:513
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 512/418-3000
; TELEFAX: 512/474-7577
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
US-08-785-271-10

Query Match 98.5%; Score 670; DB 2; Length 217;
Best Local Similarity 99.2%; Pred. No. 4,1e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES1PT 61
Db 27 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES1PT 86

QY 62 PSNREETOQKSNLELRLISLLIQSWLEPVQFLRSVFANSIVGASDSNVYDLKDLLEG 121

Db 87 PSNREETOQKSNLELRLISLLIQSWLEPVQFLRSVFANSIVGASDSNVYDLKDLLEG 146

QY 122 IOTLMGRLEDGSP 134
Db 147 IOTLMGRLEDGSP 159

RESULT 11
US-08-759-628-11
; Sequence 11, Application US/08759628
; Patent No. 6225446
; GENERAL INFORMATION:
; APPLICANT: Altman, Scott W.
; APPLICANT: Rock, Fernando L.
; APPLICANT: Bazan, J. Fernando
; APPLICANT: Kastelein, Robert A.
; TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMALIAN PROTEINS
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESSES:
; ADDRESSEE: DNAX Research Institute
; STREET: 901 California Avenue
; CITY: Palo Alto
; STATE: California
; COUNTRY: USA
; ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent in Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/759,628
; FILING DATE: 05-DEC-1996
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/008,574
; FILING DATE: 06-DEC-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0552Q
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 32..53
; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 94..115
; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 133..153
; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 192..210
; OTHER INFORMATION: /note= "The peptides above are
; OTHER INFORMATION: depicted in figure 1"

US-08-759-628-11

Query Match 98.5%; Score 670; DB 2; Length 217;
Best Local Similarity 99.2%; Pred. No. 4,1e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSRLLPDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLSFSSES1PT 61

Thu May 11 13:38:24 2006

us-10-714-067-24.raii

Page 6

| | | | |
|----|-----|--|-----|
| Db | 27 | FPPTPLSLRPFPMALRAHRLHQQLAFDPTTQSBEEAYIRKQKSTSLQNPQISLCSSEIPT | 86 |
| QY | 62 | PSNNEETQOKSNLELRLISLLIQSMLEPVQFLRSVPANSLVYGASDSNYVDLKLDEEG | 121 |
| Db | 87 | PSNNEETQOKSNLELRLISLLIQSMLEPVQFLRSVPANSLVYGASDSNYVDLKLDEEG | 146 |
| QY | 122 | IQTLMGRLDEGSP | 134 |
| Db | 147 | IQTLMGRLDEGSP | 159 |

RESULT 12
US-09-284

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? Sequence 1, Application US/09284878
? Patent No. 6342375
? GENERAL INFORMATION:
? APPLICANT: Olazaran, Martha Guerrero
? APPLICANT: Saidano, Hugo Barrera
? APPLICANT: Salvado, Jose Maria Viader
? TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
? TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
? FILE REFERENCE: 1829.0010000
? CURRENT APPLICATION NUMBER: US/09/284,878
? CURRENT FILING DATE: 1999-07-21
? PRIOR APPLICATION NUMBER: PCT/MX97/00033
? PRIOR FILING DATE: 1997-10-24
? NUMBER OF SEQ ID NOS: 9
? SOFTWARE: PatentIn Ver. 2.1
? SEQ ID NO 1
? LENGTH: 217
? TYPE: PRT
? ORGANISM: Homo sapiens
? OS-09-284-878-1

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| | | | | |
|-----------------------|--------------|--------------------|---------------|-------------|
| Query Match | 98.5% | Score 670 | DB 2; | Length 217; |
| Best Local Similarity | 99.2%; | Pred. No. 4.1e-71; | | |
| Matches 132; | Conservative | 0; | Mismatches 1; | Indels 0; |
| | | | Gaps | 0 |

Qy 2 PPIPIPSRLFDNMALAHRLHOLAPPTQGFPEAAIIPKQKSFLOMQTSLCSSESIPt 61

Db 27 PPIPIPSRLFDNMALAHRLHOLAPPTQGFPEAAIIPKQKSFLOMQTSLCSSESIPt 86

Qy 62 PSNRERTQOKSNIELIRISILLIQSMLEVPQTRSVFANSILYGGASDSNVYDLKDIEBG 127

87 PSNRERTQOKSNIELIRISILLIQSMLEVPQTRSVFANSILYGGASDSNVYDLKDIEBG 146

| | | | |
|----|-----|---------------|-----|
| QY | 122 | IQTLMGRLEDGSP | 134 |
| | | | |
| Db | 147 | IQTLMGRLEDGSP | 159 |

RESULT 13
US-09-929

```

Sequence 9, Application US/093929918
Patent No. 6773899
GENERAL INFORMATION:
APPLICANT: Kordyum, Vitaliy A.
APPLICANT: Chernykh, Svetlana I.
APPLICANT: Slavchenko, Iryna Yu.
APPLICANT: Vozianov, Oleksandr
TITLE OF INVENTION: PHAGE-DEPENDENT SUPER PRODUCTION OF
TITLE OF INVENTION: BIOLOGICALLY ACTIVE PROTEIN AND PEPTIDES
FILE REFERENCE: PHAGE.006A
CURRENT APPLICATION NUMBER: US/09/929,918
CURRENT FILING DATE: 2001-08-15
PRIOR APPLICATION NUMBER: 09/318,288
PRIOR FILING DATE: 1999-05-25
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 9
LENGTH: 217
TYPE: PRT

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ORGANISM: Homo sapiens
US-09-929-918-9

| | | | | |
|---------------------------|-------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 2; | Length 217; |
| Best Local Similarly | 99.2% | Pred. No. 4,1e-71; | | |
| Matches 132; Conservative | 0; | Mismatches 1; | Indels 0; | Gaps 0 |

QY 2 FPTILSRLFDNAMLEAARHLQLAFTDYQFEFEAYIPKQKYSFLQNPQTSLSFSESIP 61
DB 27 FPTILSRLFDNAMLEAARHLQLAFTDYQFEFEAYIPKQKYSFLQNPQTSLSFSESIP 86

Qy 62 PSNREETQOKSNLEIRISILLISWLEPQFLRVSFANSLVYGAADSNVYLLKDIIEG 121
Db 87 PSNREETQOKSNLEIRISILLISWLBPVQFLRVSFANSLVYGAADSNVYLLKDIIEG 146

| | | | |
|----|-----|---------------|-----|
| QY | 122 | IQTLMGRLEDGSP | 134 |
| | | | |
| Db | 147 | IQTLMGRLEDGSP | 159 |

RESULT 14
US-09-571

```

; Sequence 1, Application US/09571024B
; Patent No. 6946265
; GENERAL INFORMATION:
; APPLICANT: Filikov, Anton
; TITLE OF INVENTION: NOVEL NUCLEIC ACIDS AND PROTEINS WITH GROWTH HORMONE ACTIVITY
; FILE REFERENCE: A-67477-1/RPT/RMS/RMK
; CURRENT APPLICATION NUMBER: US/09/571,024B
; CURRENT FILING DATE: 2000-05-12
; PRIOR APPLICATION NUMBER: US 60/133,784
; PRIOR FILING DATE: 1999-05-12
; NUMBER OF SEQ ID NOS: 14
; SOFTWARE: Patentin version 3.2
; SEQ ID NO 1
; LENGTH: 217
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: SIGNAL
; LOCATION: (1)..(26)
; FEATURE:
; NAME/KEY: mat_peptide
; LOCATION: (27)..()
; US-09-571-024B-1

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| | | | | |
|----------------------|----------------|-------------------|----------|------------|
| Query Match | 98.5% | Score 670 | DB 2 | Length 217 |
| Best Local Similarly | 99.2% | Pred. No. 4.1e-71 | | |
| Matches 132 | Conservative 0 | Mismatches 1 | Indels 0 | Gaps 0 |

QY 2 FPTPLSRLPNNALCAHRHLOAFDTQGEFEAYIPKQKYSFQNPQTSLSFSSISPT 61

Db 27 FPTPLSRLPNNALCAHRHLOAFDTQGEFEAYIPKQKYSFQNPQTSLSFSSISPT 86

| QY | 62 | PSNREETQOKSNLELRISLLISQMLEPQOFLRSVFANSI.VYGASDSNVYDLKDLSEG | 121 |
|----|----|--|-----|
| Db | 87 | PSNREETQOKSNLELRISLLISQMLEPQOFLRSVFANSI.VYGASDSNVYDLKDLSEG | 146 |

| | | | |
|----|-----|--------------|-----|
| Qy | 122 | IQTLMGRLEDSP | 134 |
| | | | |
| Db | 147 | IQTLMGRLEDSP | 159 |

RESULT 15
US-09-424

Sequence 25, Application US/09424620B
Patent No. 6391585
GENERAL INFORMATION:
APPLICANT: HANIL SYNTHETIC FIBER CO., LTD
JANG, Ki-Ryong
MOON, Jae-Moong
BAE, Cheon-Soon

YANG, Deo-Suk
LEB, Jee-Mon
SEONG, Baik-Lin
TITLE OF INVENTION: Process for preparing recombinant proteins using highly
efficient expression vector from Sacharomyces cerevisiae
NUMBER OF SEQUENCES: 25
CORRESPONDENCE ADDRESS:
ADDRESSEE: BACHMAN & LAPOINTE, P.C.
STREET: Suite 1201, 900 Chapel Street
CITY: New Haven
STATE: Connecticut
COUNTRY: U.S.A.
ZIP: 06510-2802
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 1.44 Mb storage
COMPUTER: IBM
OPERATING SYSTEM: WINDOWS 95/98
SOFTWARE: MS WORD
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/424,620B
FILING DATE: 24-No. 6391585-1999
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
LENGTH: 241 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: PROTEIN
SEQUENCE DESCRIPTION: SEQ ID NO: 25:
US-09-424-620B-25

Query Match 98.5%; Score 670; DB 2; Length 241;
Best Local Similarity 99.2%; Pred. No. 4.8e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 FPTPLSLRLFDNMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSES IPT 61
DB 51 FPTPLSLRLFDNMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSES IPT 110
QY 62 PSNREETOQKSNLELRISLLLIQSWELEPVQFLRSVFANSILVYGASDSNYYDLKDLBEG 121
DB 111 PSNREETOQKSNLELRISLLLIQSWELEPVQFLRSVFANSILVYGASDSNYYDLKDLBEG 170
QY 122 IOTLMGRLEDDGSP 134
DB 171 IOTLMGRLEDDGSP 183

Search completed: May 11, 2006, 12:03:11
Job time : 46 secs

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GenCore version 5.1.8
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OM protein - protein search, using sw model

Run on: May 11, 2006, 12:02:34 ; Search time 165 Seconds
(without alignments)
339.328 Million cell updates/sec

Title: US-10-714-067-24

Perfect score: 680

Sequence: 1 MFPTPLSRFDNMLRAHR.....LKOLEGIQTLMGRLDGSP 134

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Database : Published Applications AA Main:

1: /cgn2_6/ptodaca/1/pubpaa/US07_PUBCOMB.pep:*
2: /cgn2_6/ptodaca/1/pubpaa/US08_PUBCOMB.pep:*
3: /cgn2_6/ptodaca/1/pubpaa/US09_PUBCOMB.pep:*
4: /cgn2_6/ptodaca/1/pubpaa/US10A_PUBCOMB.pep:*
5: /cgn2_6/ptodaca/1/pubpaa/US10B_PUBCOMB.pep:*
6: /cgn2_6/ptodaca/1/pubpaa/US11_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|--------------------|-------------------|
| 1 | 680 | 100.0 | 134 | US-09-819-094-24 | Sequence 24, Appl |
| 2 | 680 | 100.0 | 134 | US-10-714-067-24 | Sequence 24, Appl |
| 3 | 675 | 99.3 | 188 | US-10-621-693-18 | Sequence 18, Appl |
| 4 | 675 | 99.3 | 192 | US-09-819-094-23 | Sequence 23, Appl |
| 5 | 675 | 99.3 | 192 | US-10-621-693-8 | Sequence 8, Appl |
| 6 | 675 | 99.3 | 192 | US-10-621-693-78 | Sequence 78, Appl |
| 7 | 675 | 99.3 | 192 | US-10-621-693-86 | Sequence 86, Appl |
| 8 | 675 | 99.3 | 192 | US-10-714-067-23 | Sequence 23, Appl |
| 9 | 675 | 99.3 | 193 | US-10-621-693-42 | Sequence 42, Appl |
| 10 | 675 | 99.3 | 206 | US-10-621-693-72 | Sequence 72, Appl |
| 11 | 675 | 99.3 | 213 | US-10-908-400A-95 | Sequence 95, Appl |
| 12 | 675 | 99.3 | 216 | US-10-908-400A-91 | Sequence 91, Appl |
| 13 | 675 | 99.3 | 216 | US-10-908-400A-96 | Sequence 96, Appl |
| 14 | 675 | 99.3 | 216 | US-10-908-400A-97 | Sequence 97, Appl |
| 15 | 675 | 99.3 | 216 | US-10-908-400A-98 | Sequence 98, Appl |
| 16 | 675 | 99.3 | 216 | US-10-908-400A-99 | Sequence 99, Appl |
| 17 | 675 | 99.3 | 216 | US-10-908-400A-100 | Sequence 100, App |
| 18 | 675 | 99.3 | 216 | US-10-908-400A-101 | Sequence 101, App |
| 19 | 675 | 99.3 | 216 | US-10-908-400A-102 | Sequence 102, App |
| 20 | 675 | 99.3 | 216 | US-10-908-400A-103 | Sequence 103, App |
| 21 | 675 | 99.3 | 222 | US-10-908-400A-94 | Sequence 94, Appl |
| 22 | 675 | 99.3 | 391 | US-10-621-693-51 | Sequence 51, Appl |
| 23 | 675 | 99.3 | 574 | US-10-621-693-32 | Sequence 32, Appl |
| 24 | 675 | 99.3 | 576 | US-10-621-693-39 | Sequence 39, Appl |
| 25 | 675 | 99.3 | 589 | US-10-621-693-53 | Sequence 53, Appl |
| 26 | 675 | 99.3 | 786 | US-10-621-693-55 | Sequence 55, Appl |
| 27 | 675 | 99.3 | 810 | US-10-621-693-76 | Sequence 76, Appl |

| | | | | | | |
|----|-----|------|-----|---|--------------------|-------------------|
| 28 | 672 | 98.8 | 794 | 5 | US-10-775-204-1604 | Sequence 1604, Ap |
| 29 | 672 | 98.8 | 800 | 5 | US-10-775-204-1303 | Sequence 1303, Ap |
| 30 | 670 | 98.5 | 191 | 4 | US-10-153-207-1 | Sequence 1, Appl |
| 31 | 670 | 98.5 | 191 | 4 | US-10-400-377-1 | Sequence 1, Appl |
| 32 | 670 | 98.5 | 191 | 4 | US-10-400-708-1 | Sequence 1, Appl |
| 33 | 670 | 98.5 | 191 | 4 | US-10-298-148-1 | Sequence 1, Appl |
| 34 | 670 | 98.5 | 191 | 4 | US-10-646-798-2 | Sequence 2, Appl |
| 35 | 670 | 98.5 | 191 | 4 | US-10-621-693-2 | Sequence 2, Appl |
| 36 | 670 | 98.5 | 191 | 4 | US-10-621-693-21 | Sequence 21, Appl |
| 37 | 670 | 98.5 | 191 | 4 | US-10-621-693-80 | Sequence 80, Appl |
| 38 | 670 | 98.5 | 191 | 4 | US-10-621-693-82 | Sequence 82, Appl |
| 39 | 670 | 98.5 | 191 | 4 | US-10-621-693-84 | Sequence 84, Appl |
| 40 | 670 | 98.5 | 191 | 4 | US-10-658-834A-879 | Sequence 879, App |
| 41 | 670 | 98.5 | 191 | 4 | US-10-658-834A-880 | Sequence 880, App |
| 42 | 670 | 98.5 | 191 | 4 | US-10-658-834A-881 | Sequence 881, App |
| 43 | 670 | 98.5 | 191 | 4 | US-10-658-834A-882 | Sequence 882, App |
| 44 | 670 | 98.5 | 191 | 4 | US-10-658-834A-883 | Sequence 883, App |
| 45 | 670 | 98.5 | 191 | 4 | US-10-658-834A-884 | Sequence 884, App |

ALIGNMENTS

```
RESULT 1
US-09-819-094-24
Sequence 24, Application US/09819094
Publication No. US20030106382A1
GENERAL INFORMATION:
APPLICANT: Weiner, Richard I.
APPLICANT: Martial, Joseph A.
APPLICANT: Scruman, Ingrid
APPLICANT: Taylor, Robert
APPLICANT: Bentzien, Frauke
TITLE OR INVENTION: No. US20030106382A1 Antiangiogenic Peptide Agents and Their
FILE REFERENCE: US2003-018/0205
CURRENT APPLICATION NUMBER: US/09/819,094
CURRENT FILING DATE: 2001-03-27
PRIOR APPLICATION NUMBER: 09/076,675
PRIOR FILING DATE: 1998-05-12
PRIOR APPLICATION NUMBER: 60/046,394
PRIOR FILING DATE: 1997-05-12
NUMBER OF SEQ ID NOS: 34
SEQ ID NO 24
LENGTH: 134
TYPE: PRT
ORGANISM: Homo sapiens
US-09-819-094-24
Query Match 100.0%; Score 680; DB 3; Length 134;
Best Local Similarity 100.0%; Pred. No. 2.9e-64;
Matches 134; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MFPTPLSRFDNMLRAHRLHQLAFPTVOEFBEAVYIPKEOKYSFLQNPQTSLSFSHSIP 60
Db 1 MFPTPLSRFDNMLRAHRLHQLAFPTVOEFBEAVYIPKEOKYSFLQNPQTSLSFSHSIP 60
QY 61 TPNRRETOOKSNLELIRISLLIQSWLEPVQFLRSVFANSIYVYGSASDNYVDLKLKER 120
Db 61 TPNRRETOOKSNLELIRISLLIQSWLEPVQFLRSVFANSIYVYGSASDNYVDLKLKER 120
QY 121 GIOTLMGRLEDGSP 134
Db 121 GIOTLMGRLEDGSP 134
RESULT 2
US-10-714-067-24
Sequence 24, Application US/10714067
Publication No. US20040077054A1
GENERAL INFORMATION:
APPLICANT: Weiner, Richard I.
APPLICANT: Martial, Joseph A.
```

APPLICANT: Struman, Ingrid
APPLICANT: Taylor, Robert
APPLICANT: Bentzien, Frauke
TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their
TITLE OF INVENTION: Therapeutic and Diagnostic Use
FILE REFERENCE: UCSF-018/0205
CURRENT APPLICATION NUMBER: US/10/714,067
CURRENT FILING DATE: 2003-11-14
PRIOR APPLICATION NUMBER: US/09/819,094
PRIOR FILING DATE: 2001-03-27
PRIOR APPLICATION NUMBER: 09/076,675
PRIOR FILING DATE: 1998-05-12
PRIOR APPLICATION NUMBER: 60/046,394
PRIOR FILING DATE: 1997-05-12
NUMBER OF SEQ ID NOS: 34
SEQ ID NO 24
LENGTH: 134
TYPE: PRT
ORGANISM: Homo sapiens
US-10-714-067-24

Query Match 100.0%; Score 680; DB 4; Length 134;
Best Local Similarity 100.0%; Pred. No. 2.9e-64;
Matches 134; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MFPTIPSLRFLDNAMLRHRLHQLAPDTYQEFEEAYIPKQKYSFLQNPQTSLSFSSSIP 60
DB 1 MFPTIPSLRFLDNAMLRHRLHQLAPDTYQEFEEAYIPKQKYSFLQNPQTSLSFSSSIP 60
QY 61 TPSNRERTQKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDL 120
DB 61 TPSNRERTQKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDL 120
QY 121 GIOTLMGRLEDDSP 134
DB 121 GIOTLMGRLEDDSP 134

RESULT 3

US-10-621-693-18
Sequence 18, Application US/10621693
Publication No. US20040059093A1
GENERAL INFORMATION:
APPLICANT: Gentide Biopharmaceuticals, Inc.
APPLICANT: Bussell, Stuart
TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENCES
TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
FILE REFERENCE: GNT-00101.P.1-US
CURRENT APPLICATION NUMBER: US/10/621,693
CURRENT FILING DATE: 2003-07-16
PRIOR APPLICATION NUMBER: US 60/396,466
PRIOR FILING DATE: 2002-07-16
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PatentIn version 3.0
SEQ ID NO 18
LENGTH: 188
TYPE: PRT
ORGANISM: Artificial
FEATURE:
OTHER INFORMATION: synthetic sequence
US-10-621-693-18

Query Match 99.3%; Score 675; DB 4; Length 188;
Best Local Similarity 99.3%; Pred. No. 1.5e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPSLRFLDNAMLRHRLHQLAPDTYQEFEEAYIPKQKYSFLQNPQTSLSFSSSIP 60
DB 1 MFPTIPSLRFLDNAMLRHRLHQLAPDTYQEFEEAYIPKQKYSFLQNPQTSLSFSSSIP 60
QY 61 TPSNRERTQKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDL 120
DB 61 TPSNRERTQKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDL 120

QY 121 GIOTLMGRLEDDSP 134
DB 121 GIOTLMGRLEDDSP 134

RESULT 4

US-09-819-094-23
Sequence 23, Application US/09819094
Publication No. US20030186382A1
GENERAL INFORMATION:
APPLICANT: Weiner, Richard I.
APPLICANT: Marcial, Joseph A.
APPLICANT: Struman, Ingrid
APPLICANT: Taylor, Robert
APPLICANT: Bentzien, Frauke
TITLE OF INVENTION: No. US20030186382A1 Antiangiogenic Peptide Agents and Their
TITLE OF INVENTION: Therapeutic and Diagnostic Use
FILE REFERENCE: UCSF-018/0205
CURRENT APPLICATION NUMBER: US/09/819,094
CURRENT FILING DATE: 2001-03-27
PRIOR APPLICATION NUMBER: 09/076,675
PRIOR FILING DATE: 1998-05-12
PRIOR APPLICATION NUMBER: 60/046,394
PRIOR FILING DATE: 1997-05-12
NUMBER OF SEQ ID NOS: 34
SEQ ID NO 23
LENGTH: 192
TYPE: PRT
ORGANISM: Homo sapiens
US-09-819-094-23

Query Match 99.3%; Score 675; DB 3; Length 192;
Best Local Similarity 99.3%; Pred. No. 1.6e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPSLRFLDNAMLRHRLHQLAPDTYQEFEEAYIPKQKYSFLQNPQTSLSFSSSIP 60
DB 1 MFPTIPSLRFLDNAMLRHRLHQLAPDTYQEFEEAYIPKQKYSFLQNPQTSLSFSSSIP 60
QY 61 TPSNRERTQKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDL 120
DB 61 TPSNRERTQKSNLELRISILLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDL 120
QY 121 GIOTLMGRLEDDSP 134
DB 121 GIOTLMGRLEDDSP 134

RESULT 5

US-10-621-693-8
Sequence 8, Application US/10621693
Publication No. US20040059093A1
GENERAL INFORMATION:
APPLICANT: Gentide Biopharmaceuticals, Inc.
APPLICANT: Bussell, Stuart
TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENCES
TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
FILE REFERENCE: GNT-00101.P.1-US
CURRENT APPLICATION NUMBER: US/10/621,693
CURRENT FILING DATE: 2003-07-16
PRIOR APPLICATION NUMBER: US 60/396,466
PRIOR FILING DATE: 2002-07-16
NUMBER OF SEQ ID NOS: 86
SOFTWARE: PatentIn version 3.0
SEQ ID NO 8
LENGTH: 192
TYPE: PRT
ORGANISM: Artificial
FEATURE:
OTHER INFORMATION: synthetic sequence
NAME/KEY: mat_peptide

LOCATION: (1)..()

US-10-621-693-8

Query Match 99.3%; Score 675; DB 4; Length 192;

Best Local Similarity 99.3%; Pred. No. 1.6e-63;

Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

DB 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

QY 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

DB 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

QY 121 GIOTLMGRLEDGSP 134

DB 121 GIOTLMGRLEDGSP 134

RESULT 6

US-10-621-693-78

Sequence 78; Application US/10621693

Publication No. US20040059093A1

GENERAL INFORMATION:

APPLICANT: Gentile Biopharmaceuticals, Inc.

TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC

FILE REFERENCE: GNT-00101.P.1-US

CURRENT APPLICATION NUMBER: US/10/621,693

PRIOR FILING DATE: 2003-07-16

PRIOR APPLICATION NUMBER: US 60/396,466

NUMBER OF SEQ ID NOS: 86

SOFTWARE: PatentIn version 3.0

SEQ ID NO 78

LENGTH: 192

TYPE: PRT

ORGANISM: Artificial

OTHER INFORMATION: synthetic sequence

US-10-621-693-78

Query Match 99.3%; Score 675; DB 4; Length 192;

Best Local Similarity 99.3%; Pred. No. 1.6e-63;

Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

DB 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

QY 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

DB 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

QY 121 GIOTLMGRLEDGSP 134

DB 121 GIOTLMGRLEDGSP 134

RESULT 7

US-10-621-693-86

Sequence 86; Application US/10621693

Publication No. US20040059093A1

GENERAL INFORMATION:

APPLICANT: Gentile Biopharmaceuticals, Inc.

TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC

FILE REFERENCE: GNT-00101.P.1-US

CURRENT APPLICATION NUMBER: US/10/621,693

PRIOR FILING DATE: 2003-07-16

PRIOR APPLICATION NUMBER: US 60/396,466

NUMBER OF SEQ ID NOS: 86

SOFTWARE: PatentIn version 3.0

SEQ ID NO 86

LENGTH: 192

TYPE: PRT

ORGANISM: Artificial

OTHER INFORMATION: synthetic sequence

NAME/KEY: MISC FEATURE

LOCATION: (2)..(192)

OTHER INFORMATION: sequence is repeated N+2 times, where N is a positive whole numbe

FEATURE:

NAME/KEY: mac_peptide

LOCATION: (1)..()

US-10-621-693-86

Query Match 99.3%; Score 675; DB 4; Length 192;

Best Local Similarity 99.3%; Pred. No. 1.6e-63;

Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

DB 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

QY 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

DB 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

QY 121 GIOTLMGRLEDGSP 134

DB 121 GIOTLMGRLEDGSP 134

RESULT 8

US-10-714-067-23

Sequence 23; Application US/10714067

Publication No. US20040077054A1

GENERAL INFORMATION:

APPLICANT: Weiner, Richard I.

APPLICANT: Martial, Joseph A.

APPLICANT: Struman, Ingrid

APPLICANT: Taylor, Robert

APPLICANT: Benzien, Frauke

TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their

FILE REFERENCE: UCSF-018/02US

CURRENT APPLICATION NUMBER: US/10/714,067

PRIOR FILING DATE: 2003-11-14

PRIOR APPLICATION NUMBER: US/09/819,094

PRIOR FILING DATE: 2001-03-27

PRIOR APPLICATION NUMBER: 09/076,675

PRIOR FILING DATE: 1998-05-12

PRIOR APPLICATION NUMBER: 60/046,394

PRIOR FILING DATE: 1997-05-12

NUMBER OF SEQ ID NOS: 34

SEQ ID NO 23

LENGTH: 192

TYPE: PRT

ORGANISM: Homo sapiens

US-10-714-067-23

Query Match 99.3%; Score 675; DB 4; Length 192;

Best Local Similarity 99.3%; Pred. No. 1.6e-63;

Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

DB 1 MFPTPLSRLEFDNAMLRAHRLHQLAPDTYOEFEEAYIPKQOKYSFLQNPOTSLSFSSSIP 60

QY 61 TPNRRETOOKSNLELRISILLIQSWLEPVQFLRSVFANSLSVYGASDSNVYDLKDLLE 120

Db 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
QY 121 GIOTLMGRLEDDGSP 134
Db 121 GIOTLMGRLEDDGSP 134

RESULT 9

US-10-621-693-42
; Sequence 42, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; PRIOR FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 42
; LENGTH: 193
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-42

Query Match 99.3%; Score 675; DB 4; Length 193;
Best Local Similarity 99.3%; Pred. No. 1.6e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPTTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSESIP 60
Db 1 MPTTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSESIP 60
QY 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
Db 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
QY 121 GIOTLMGRLEDDGSP 134
Db 121 GIOTLMGRLEDDGSP 134

RESULT 10

US-10-621-693-72
; Sequence 72, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Bussell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN SEQUENC
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; PRIOR FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 72
; LENGTH: 206
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-72

Query Match 99.3%; Score 675; DB 4; Length 206;
Best Local Similarity 99.3%; Pred. No. 1.7e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPTTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSESIP 60
Db 1 MPTTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSESIP 60
QY 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
Db 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
QY 121 GIOTLMGRLEDDGSP 134
Db 121 GIOTLMGRLEDDGSP 134

RESULT 11

US-10-908-400A-95
; Sequence 95, Application US/10908400A
; Publication No. US20050203010A1
; GENERAL INFORMATION:
; APPLICANT: Atgen Co., LTD.
; TITLE OF INVENTION: Novel peptides conferring environmental stress resistance and
; TITLE OF INVENTION: Fusion proteins including said peptides
; FILE REFERENCE: 59520-03CIP
; CURRENT APPLICATION NUMBER: US/10/908,400A
; PRIOR FILING DATE: 2005-05-10
; PRIOR APPLICATION NUMBER: US 10/713,851
; PRIOR FILING DATE: 2003-11-14
; PRIOR APPLICATION NUMBER: KR 10-2004-33123
; PRIOR FILING DATE: 2004-05-11
; PRIOR APPLICATION NUMBER: KR 10-2005-36882
; PRIOR FILING DATE: 2005-05-02
; NUMBER OF SEQ ID NOS: 105
; SOFTWARE: KopatentIn 1.71
; SEQ ID NO 95
; LENGTH: 213
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: hGH-Syn119-135 fusion protein
US-10-908-400A-95

Query Match 99.3%; Score 675; DB 5; Length 213;
Best Local Similarity 99.3%; Pred. No. 1.8e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPTTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSESIP 60
Db 1 MPTTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLQNPQTSLSFSSESIP 60
QY 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
Db 61 TPNRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLLKDLER 120
QY 121 GIOTLMGRLEDDGSP 134
Db 121 GIOTLMGRLEDDGSP 134

RESULT 12

US-10-908-400A-91
; Sequence 91, Application US/10908400A
; Publication No. US20050203010A1
; GENERAL INFORMATION:
; APPLICANT: Atgen Co., LTD.
; APPLICANT: KIM, Jong-Sun
; TITLE OF INVENTION: Novel peptides conferring environmental stress resistance and
; TITLE OF INVENTION: Fusion proteins including said peptides
; FILE REFERENCE: 59520-03CIP
; CURRENT APPLICATION NUMBER: US/10/908,400A

;; CURRENT FILING DATE: 2005-05-10
;; PRIOR APPLICATION NUMBER: US 10/713,851
;; PRIOR FILING DATE: 2003-11-14
;; PRIOR APPLICATION NUMBER: KR 10-2004-33123
;; PRIOR FILING DATE: 2004-05-11
;; PRIOR APPLICATION NUMBER: KR 10-2005-36882
;; PRIOR FILING DATE: 2005-05-02
;; NUMBER OF SEQ ID NOS: 105
;; SOFTWARE: Kopatentlin 1.71
;; SEQ ID NO 91
;; LENGTH: 216
;; TYPE: PRT
;; ORGANISM: Artificial Sequence
;; FEATURE:
;; OTHER INFORMATION: Synthetic Construct for hGH-Syn119-140 fusion protein
US-10-908-400A-91

Query Match 99.3%; Score 675; DB 5; Length 216;
Best Local Similarity 99.3%; Pred. No. 1.9e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYSFLLQNPQTSLSFSSSIP 60
|||
DB 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYSFLLQNPQTSLSFSSSIP 60
|||
QY 61 TPSNREETOOKSNLELRISLLIQSWLEPVOFLRSVPANSLVYGASDSNVYDLKDL 120
|||
DB 61 TPSNREETOOKSNLELRISLLIQSWLEPVOFLRSVPANSLVYGASDSNVYDLKDL 120
|||
QY 121 GIOTLMGRLEDDGSP 134
|||
DB 121 GIOTLMGRLEDDGSP 134
|||

RESULT 13
US-10-908-400A-96
;; Sequence 96, Application US/10908400A
;; Publication No. US20050203010A1
;; GENERAL INFORMATION:
;; APPLICANT: Atgen Co., LTD.
;; APPLICANT: KIM, Jong-Sun
;; TITLE OF INVENTION: Novel peptides conferring environmental stress resistance and
;; FILE REFERENCE: 59520-03CIP
;; CURRENT APPLICATION NUMBER: US/10/908,400A
;; CURRENT FILING DATE: 2005-05-10
;; PRIOR APPLICATION NUMBER: US 10/713,851
;; PRIOR FILING DATE: 2003-11-14
;; PRIOR APPLICATION NUMBER: KR 10-2004-33123
;; PRIOR FILING DATE: 2004-05-11
;; PRIOR APPLICATION NUMBER: KR 10-2005-36882
;; PRIOR FILING DATE: 2005-05-02
;; NUMBER OF SEQ ID NOS: 105
;; SOFTWARE: Kopatentlin 1.71
;; SEQ ID NO 96
;; LENGTH: 216
;; TYPE: PRT
;; ORGANISM: Artificial Sequence
;; FEATURE:
;; OTHER INFORMATION: hGH-Syn123A fusion protein
US-10-908-400A-96

Query Match 99.3%; Score 675; DB 5; Length 216;
Best Local Similarity 99.3%; Pred. No. 1.9e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYSFLLQNPQTSLSFSSSIP 60
|||
DB 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYSFLLQNPQTSLSFSSSIP 60
|||
QY 61 TPSNREETOOKSNLELRISLLIQSWLEPVOFLRSVPANSLVYGASDSNVYDLKDL 120
|||
DB 61 TPSNREETOOKSNLELRISLLIQSWLEPVOFLRSVPANSLVYGASDSNVYDLKDL 120
|||

QY 121 GIOTLMGRLEDDGSP 134
|||
DB 121 GIOTLMGRLEDDGSP 134
|||

RESULT 14
US-10-908-400A-97
;; Sequence 97, Application US/10908400A
;; Publication No. US20050203010A1
;; GENERAL INFORMATION:
;; APPLICANT: Atgen Co., LTD.
;; APPLICANT: KIM, Jong-Sun
;; TITLE OF INVENTION: Novel peptides conferring environmental stress resistance and
;; FILE REFERENCE: 59520-03CIP
;; CURRENT APPLICATION NUMBER: US/10/908,400A
;; CURRENT FILING DATE: 2005-05-10
;; PRIOR APPLICATION NUMBER: US 10/713,851
;; PRIOR FILING DATE: 2003-11-14
;; PRIOR APPLICATION NUMBER: KR 10-2004-33123
;; PRIOR FILING DATE: 2004-05-11
;; PRIOR APPLICATION NUMBER: KR 10-2005-36882
;; PRIOR FILING DATE: 2005-05-02
;; NUMBER OF SEQ ID NOS: 105
;; SOFTWARE: Kopatentlin 1.71
;; SEQ ID NO 97
;; LENGTH: 216
;; TYPE: PRT
;; ORGANISM: Artificial Sequence
;; FEATURE:
;; OTHER INFORMATION: hGH-Syn133A fusion protein
US-10-908-400A-97

Query Match 99.3%; Score 675; DB 5; Length 216;
Best Local Similarity 99.3%; Pred. No. 1.9e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYSFLLQNPQTSLSFSSSIP 60
|||
DB 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFEEAYIPKEOKYSFLLQNPQTSLSFSSSIP 60
|||
QY 61 TPSNREETOOKSNLELRISLLIQSWLEPVOFLRSVPANSLVYGASDSNVYDLKDL 120
|||
DB 61 TPSNREETOOKSNLELRISLLIQSWLEPVOFLRSVPANSLVYGASDSNVYDLKDL 120
|||
QY 121 GIOTLMGRLEDDGSP 134
|||
DB 121 GIOTLMGRLEDDGSP 134
|||

RESULT 15
US-10-908-400A-98
;; Sequence 98, Application US/10908400A
;; Publication No. US20050203010A1
;; GENERAL INFORMATION:
;; APPLICANT: Atgen Co., LTD.
;; APPLICANT: KIM, Jong-Sun
;; TITLE OF INVENTION: Novel peptides conferring environmental stress resistance and
;; FILE REFERENCE: 59520-03CIP
;; CURRENT APPLICATION NUMBER: US/10/908,400A
;; CURRENT FILING DATE: 2005-05-10
;; PRIOR APPLICATION NUMBER: US 10/713,851
;; PRIOR FILING DATE: 2003-11-14
;; PRIOR APPLICATION NUMBER: KR 10-2004-33123
;; PRIOR FILING DATE: 2004-05-11
;; PRIOR APPLICATION NUMBER: KR 10-2005-36882
;; PRIOR FILING DATE: 2005-05-02
;; NUMBER OF SEQ ID NOS: 105
;; SOFTWARE: Kopatentlin 1.71
;; SEQ ID NO 98
;; LENGTH: 216

TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: hGH-SynA124E fusion protein
US-10-908-400A-98

Query Match 99.3%; Score 675; DB 5; Length 216;
Best Local Similarity 99.3%; Pred. No. 1.9e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

| | | | |
|----|-----|---|-----|
| QY | 1 | MPTTIPLSRLFDNAMLPAHRLHQIAPPTYQEFERAYIPKEOKYSFLONPQTSLSFSSIP | 60 |
| | | | |
| Db | 1 | MPTTIPLSRLFDNAMLPAHRLHQIAPPTYQEFERAYIPKEOKYSFLONPQTSLCFSSIP | 60 |
| | | | |
| QY | 61 | TPSNREETQOKSNLELRISLILIQSWLEPVQFLRSVFANSLVYGASDSNYYDLKDLEE | 120 |
| | | | |
| Db | 61 | TPSNREETQOKSNLELRISLILIQSWLEPVQFLRSVFANSLVYGASDSNYYDLKDLEE | 120 |
| | | | |
| QY | 121 | GIQTLMGRLLEDGSP | 134 |
| | | | |
| Db | 121 | GIQTLMGRLLEDGSP | 134 |

Search completed: May 11, 2006, 12:06:03
Job time : 166 secs

GenCore version 5.1.8
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OM protein - protein search, using sw model

Run on: May 11, 2006, 12:03:24 ; Search time 28 Seconds
(Without alignments)
224.684 Million cell updates/sec

Title: US-10-714-067-24

Perfect score: 680

Sequence: 1 MFPTPLSRFDNMLRAHRLHQLADPTVQEFEEAYIPKEOKYSFLQNPOTSLSFSSSIP 134

Scoring table: BLOSUM62

Gapop 10.0 , Gapept 0.5

Searched: 250354 seqs, 4694837 residues

Total number of hits satisfying chosen parameters: 250354

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Published Applications AA.New:*
1: /SIDS5/ptodata/1/pubpaa/US06_NEW_PUB.pep1:*
2: /SIDS5/ptodata/1/pubpaa/US06_NEW_PUB.pep1:*
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6: /SIDS5/ptodata/1/pubpaa/US09_NEW_PUB.pep1:*
7: /SIDS5/ptodata/1/pubpaa/US10_NEW_PUB.pep1:*
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9: /SIDS5/ptodata/1/pubpaa/US11_NEW_PUB.pep1:*
10: /SIDS5/ptodata/1/pubpaa/US11_NEW_PUB.pep1:*
11: /SIDS5/ptodata/1/pubpaa/US11_NEW_PUB.pep1:*
12: /SIDS5/ptodata/1/pubpaa/US11_NEW_PUB.pep1:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------------|
| 1 | 675 | 99.3 | 192 | 11 | US-11-033-365-159 |
| 2 | 675 | 99.3 | 192 | 11 | US-11-033-365-197 |
| 3 | 675 | 99.3 | 192 | 11 | US-11-033-365-198 |
| 4 | 675 | 99.3 | 192 | 11 | US-11-033-365-200 |
| 5 | 670 | 98.5 | 191 | 9 | US-10-519-390-6 |
| 6 | 670 | 98.5 | 191 | 10 | US-11-267-871-1 |
| 7 | 670 | 98.5 | 191 | 10 | US-11-267-871-162 |
| 8 | 670 | 98.5 | 191 | 10 | US-11-267-871-163 |
| 9 | 670 | 98.5 | 191 | 10 | US-11-267-871-164 |
| 10 | 670 | 98.5 | 191 | 10 | US-11-267-871-165 |
| 11 | 670 | 98.5 | 191 | 10 | US-11-267-871-166 |
| 12 | 670 | 98.5 | 191 | 10 | US-11-267-871-167 |
| 13 | 670 | 98.5 | 191 | 10 | US-11-267-871-168 |
| 14 | 670 | 98.5 | 191 | 10 | US-11-267-871-169 |
| 15 | 670 | 98.5 | 191 | 10 | US-11-267-871-170 |
| 16 | 670 | 98.5 | 191 | 10 | US-11-267-871-171 |
| 17 | 670 | 98.5 | 191 | 10 | US-11-267-871-172 |
| 18 | 670 | 98.5 | 191 | 10 | US-11-267-871-173 |
| 19 | 670 | 98.5 | 191 | 10 | US-11-267-871-174 |
| 20 | 670 | 98.5 | 191 | 10 | US-11-267-871-175 |
| 21 | 670 | 98.5 | 191 | 10 | US-11-267-871-176 |

| | | | | | | |
|----|-----|------|-----|----|-------------------|-------------------|
| 22 | 670 | 98.5 | 191 | 10 | US-11-267-871-177 | Sequence 177, App |
| 23 | 670 | 98.5 | 191 | 10 | US-11-267-871-178 | Sequence 178, App |
| 24 | 670 | 98.5 | 191 | 10 | US-11-267-871-179 | Sequence 179, App |
| 25 | 670 | 98.5 | 191 | 10 | US-11-267-871-180 | Sequence 180, App |
| 26 | 670 | 98.5 | 191 | 10 | US-11-267-871-181 | Sequence 181, App |
| 27 | 670 | 98.5 | 191 | 10 | US-11-267-871-182 | Sequence 182, App |
| 28 | 670 | 98.5 | 191 | 10 | US-11-267-871-183 | Sequence 183, App |
| 29 | 670 | 98.5 | 191 | 10 | US-11-267-871-184 | Sequence 184, App |
| 30 | 670 | 98.5 | 191 | 10 | US-11-267-871-185 | Sequence 185, App |
| 31 | 670 | 98.5 | 191 | 10 | US-11-267-871-186 | Sequence 186, App |
| 32 | 670 | 98.5 | 191 | 10 | US-11-267-871-187 | Sequence 187, App |
| 33 | 670 | 98.5 | 191 | 10 | US-11-267-871-188 | Sequence 188, App |
| 34 | 670 | 98.5 | 191 | 10 | US-11-267-871-189 | Sequence 189, App |
| 35 | 670 | 98.5 | 191 | 10 | US-11-267-871-190 | Sequence 190, App |
| 36 | 670 | 98.5 | 191 | 10 | US-11-267-871-191 | Sequence 191, App |
| 37 | 670 | 98.5 | 191 | 10 | US-11-267-871-192 | Sequence 192, App |
| 38 | 670 | 98.5 | 191 | 10 | US-11-267-871-193 | Sequence 193, App |
| 39 | 670 | 98.5 | 191 | 10 | US-11-267-871-194 | Sequence 194, App |
| 40 | 670 | 98.5 | 191 | 10 | US-11-267-871-195 | Sequence 195, App |
| 41 | 670 | 98.5 | 191 | 10 | US-11-267-871-196 | Sequence 196, App |
| 42 | 670 | 98.5 | 191 | 10 | US-11-267-871-197 | Sequence 197, App |
| 43 | 670 | 98.5 | 191 | 10 | US-11-267-871-198 | Sequence 198, App |
| 44 | 670 | 98.5 | 191 | 10 | US-11-267-871-199 | Sequence 199, App |
| 45 | 670 | 98.5 | 191 | 10 | US-11-267-871-200 | Sequence 200, App |

ALIGNMENTS

RESULT 1
US-11-033-365-159
; Sequence 159, Application US/11033365
; Publication No. US20050250678A1
; GENERAL INFORMATION:
; APPLICANT: Neose Technologies Inc.
; APPLICANT: Defrees, Shawn
; APPLICANT: Zopf, David
; APPLICANT: Wang, Zhigang
; APPLICANT: Claesen, Henrik
; TITLE OF INVENTION: O-Linked Glycosylation of peptides
; FILE REFERENCE: 040853-01-5138
; CURRENT APPLICATION NUMBER: US/11/033,365
; CURRENT FILING DATE: 2005-01-10
; PRIOR APPLICATION NUMBER: 60/535,284
; PRIOR FILING DATE: 2004-01-08
; PRIOR APPLICATION NUMBER: 60/544,411
; PRIOR FILING DATE: 2004-02-12
; PRIOR APPLICATION NUMBER: 60/546,631
; PRIOR FILING DATE: 2004-02-20
; PRIOR APPLICATION NUMBER: 60/555,813
; PRIOR FILING DATE: 2004-03-23
; PRIOR APPLICATION NUMBER: 60/570,891
; NUMBER OF SEQ ID NOS: 213
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 159
; LENGTH: 192
; TYPE: PRT
; ORGANISM: Homo sapiens
; US-11-033-365-159

Query Match 99.3%; Score 675; DB 11; Length 192;
Best Local Similarity 99.3%; Pred. No. 2.8e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

| | | | |
|----|----|---|-----|
| Qy | 1 | MFPTPLSRFDNMLRAHRLHQLADPTVQEFEEAYIPKEOKYSFLQNPOTSLSFSSSIP | 60 |
| Db | 1 | MFPTPLSRFDNMLRAHRLHQLADPTVQEFEEAYIPKEOKYSFLQNPOTSLCFSSSIP | 60 |
| Qy | 61 | TPSNRETOOKSWLELRISLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKLEL | 120 |
| Db | 61 | TPSNRETOOKSWLELRISLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLKLEL | 120 |

QY 121 GIOTLMGRLEDGSP 134
Db 121 GIOTLMGRLEDGSP 134

RESULT 2

US-11-033-365-197
Sequence 197, Application US/11033365
Publication No. US20050250678A1
GENERAL INFORMATION:
APPLICANT: Neose Technologies Inc.
APPLICANT: Defrees, Shawn
APPLICANT: Zopf, David
APPLICANT: Wang, Zhiguang
APPLICANT: Clausen, Henrik
TITLE OF INVENTION: O-Linked Glycosylation of peptides
FILE REFERENCE: 040853-01-5138
CURRENT APPLICATION NUMBER: US/11/033,365
PRIOR FILING DATE: 2005-01-10
PRIOR APPLICATION NUMBER: 60/535,284
PRIOR FILING DATE: 2004-01-08
PRIOR APPLICATION NUMBER: 60/544,411
PRIOR FILING DATE: 2004-02-12
PRIOR APPLICATION NUMBER: 60/546,631
PRIOR FILING DATE: 2004-02-20
PRIOR APPLICATION NUMBER: 60/555,813
PRIOR FILING DATE: 2004-03-23
PRIOR APPLICATION NUMBER: 60/570,891
PRIOR FILING DATE: 2004-05-12
NUMBER OF SEQ ID NOS: 213
SOFTWARE: PatentIn version 3.2
SEQ ID NO 197
LENGTH: 192
TYPE: PRT
ORGANISM: Homo sapiens
US-11-033-365-197

Query Match 99.3%; Score 675; DB 11; Length 192;
Best Local Similarity 99.3%; Pred. No. 2.8e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFBEAYIPKQKTSFLONPQTSLCFSSSIP 60
Db 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFBEAYIPKQKTSFLONPQTSLCFSSSIP 60
QY 61 TPSRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
Db 61 TPSRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
QY 121 GIOTLMGRLEDGSP 134
Db 121 GIOTLMGRLEDGSP 134

RESULT 3

US-11-033-365-198
Sequence 198, Application US/11033365
Publication No. US20050250678A1
GENERAL INFORMATION:
APPLICANT: Neose Technologies Inc.
APPLICANT: Defrees, Shawn
APPLICANT: Zopf, David
APPLICANT: Wang, Zhiguang
APPLICANT: Clausen, Henrik
TITLE OF INVENTION: O-Linked Glycosylation of peptides
FILE REFERENCE: 040853-01-5138
CURRENT APPLICATION NUMBER: US/11/033,365
PRIOR FILING DATE: 2005-01-10
PRIOR APPLICATION NUMBER: 60/535,284
PRIOR FILING DATE: 2004-01-08
PRIOR APPLICATION NUMBER: 60/544,411
PRIOR FILING DATE: 2004-02-12
PRIOR APPLICATION NUMBER: 60/546,631

PRIOR FILING DATE: 2004-02-20
PRIOR APPLICATION NUMBER: 60/555,813
PRIOR FILING DATE: 2004-03-23
PRIOR APPLICATION NUMBER: 60/570,891
PRIOR FILING DATE: 2004-05-12
NUMBER OF SEQ ID NOS: 213
SOFTWARE: PatentIn version 3.2
SEQ ID NO 198
LENGTH: 192
TYPE: PRT
ORGANISM: Homo sapiens
US-11-033-365-198

Query Match 99.3%; Score 675; DB 11; Length 192;
Best Local Similarity 99.3%; Pred. No. 2.8e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFBEAYIPKQKTSFLONPQTSLCFSSSIP 60
Db 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFBEAYIPKQKTSFLONPQTSLCFSSSIP 60
QY 61 TPSRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
Db 61 TPSRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
QY 121 GIOTLMGRLEDGSP 134
Db 121 GIOTLMGRLEDGSP 134

RESULT 4

US-11-033-365-200
Sequence 200, Application US/11033365
Publication No. US20050250678A1
GENERAL INFORMATION:
APPLICANT: Neose Technologies Inc.
APPLICANT: Defrees, Shawn
APPLICANT: Zopf, David
APPLICANT: Wang, Zhiguang
APPLICANT: Clausen, Henrik
TITLE OF INVENTION: O-Linked Glycosylation of peptides
FILE REFERENCE: 040853-01-5138
CURRENT APPLICATION NUMBER: US/11/033,365
PRIOR FILING DATE: 2005-01-10
PRIOR APPLICATION NUMBER: 60/535,284
PRIOR FILING DATE: 2004-01-08
PRIOR APPLICATION NUMBER: 60/544,411
PRIOR FILING DATE: 2004-02-12
PRIOR APPLICATION NUMBER: 60/546,631
PRIOR FILING DATE: 2004-02-20
PRIOR APPLICATION NUMBER: 60/555,813
PRIOR FILING DATE: 2004-03-23
PRIOR APPLICATION NUMBER: 60/570,891
PRIOR FILING DATE: 2004-05-12
NUMBER OF SEQ ID NOS: 213
SOFTWARE: PatentIn version 3.2
SEQ ID NO 200
LENGTH: 192
TYPE: PRT
ORGANISM: Homo sapiens
US-11-033-365-200

Query Match 99.3%; Score 675; DB 11; Length 192;
Best Local Similarity 99.3%; Pred. No. 2.8e-63;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFBEAYIPKQKTSFLONPQTSLCFSSSIP 60
Db 1 MFPTIPLSRLFDNMLRAHRLHQLAFTYQEFBEAYIPKQKTSFLONPQTSLCFSSSIP 60
QY 61 TPSRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLER 120
Db 61 TPSRRETOOKSNLELRISLLIQSWLEPVQFLRSVFANSVLYGASDSNVYDLKDLER 120

| | | | | |
|----|-----|-----------|-------|-----|
| QY | 121 | GIQTLMGRL | EDGSP | 134 |
| | | | | |
| Db | 121 | GIQTLMGRL | EDGSP | 134 |

RESULT 5
US-10-519-390-6

Sequence 6, Application US/10519390
Publication No.: US20060008872A1

```

: GENERAL INFORMATION:
: APPLICANT: MEDEXGEN Inc.
: APPLICANT: CHUNG, Yong-Hoon
: APPLICANT: LEE, Hak-sup
: APPLICANT: YI, Ki-Man
: APPLICANT: KIM, Jae-Youn
: APPLICANT: HEO, Youn-Hwa
: TITLE OF INVENTION: A method of improving efficacy of biological response-modifying
: TITLE OF INVENTION: proteins and the example mutleins

```

| | | | | |
|--------------|--------------|--------------------|---------------|-------------|
| Query Match | 98.5% | Score 670; | DB 9; | Length 191; |
| Best Local | 99.2% | Pred. No. 9.3e-63; | | |
| Matches 132; | Conservative | 0; | Mismatches 1; | Indels 0; |
| | | | | Gaps 0; |

| | | | | | |
|----|-----|----------------------------|------------------------------|-----------|-----|
| Qy | 2 | FPPIPLPSRLFDNMMFLAHRLHOLA | FPPTVOEFEEAIIPEKOKSLFONQOTLS | CFSESISPT | 61 |
| Db | 1 | FPPIPLPSRLFDNMMFLAHRLHOLA | FPPTVOEFEEAIIPEKOKSLFONQOTLS | CFSESISPT | 60 |
| Qy | 62 | PSRRETOOKSNMELLRISLLIQSWLE | BPVQFLRSVPANSLVYGASDNDV | DLKDLEEG | 123 |
| Db | 61 | PSRRETOOKSNMELLRISLLIQSWLE | BPVQFLRSVPANSLVYGASDNDV | DLKDLEEG | 122 |
| Qy | 122 | IQTLMGRLDGGSP | | | 134 |
| Db | 121 | IQTLMGRLDGGSP | | | 133 |

RESULT 6
US-11-267-871-1

Sequence 1, Application US/1126787L
Publication No. US20060094655A1

? GENERAL INFORMATION:
 ? APPLICANT: Guyon, Thierry
 ? APPLICANT: Borrelly, Gilles
 ? APPLICANT: Dittanti, Lila
 ? APPLICANT: Vega, Manuel
 ? TITLE OF INVENTION: MODIFIED GROWTH HORMONES

```

; TYPE: PRT
;
; ORGANISM: Homo Sapiens
;
; FEATURE:
;
; OTHER INFORMATION: Wild type human Growth Hormone
US-11-267-871-1

```

| | | | | |
|---------------------------|-------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 10; | Length 191; |
| Best Local Similarity | 99.2% | Pred. No. 9.3e-63; | | |
| Matches 132; Conservative | 0; | Mismatches 1; | Indels 0; | Gaps 0; |

| | | | | | | | | |
|----|-----|-----------------|-----------|----------------|------------------|---------|-----|-----|
| Qy | 2 | FPTIPISRFEDNAMI | RAHRLH | LADPTVQEEFEAAI | IPKEOKSFLQNPQISL | SPSSSI | PT | 61 |
| | | | | | | | | |
| Db | 1 | FPTIPISRFEDNAMI | RAHRLH | LADPTVQEEFEAAI | IPKEOKSFLQNPQISL | SPSSSI | PT | 60 |
| | | | | | | | | |
| Qy | 62 | PSNRRETOOKSNM | LELRISILL | IOSMLEPVOFL | NSVFANSLVYGASDSN | YDILDKD | EEG | 122 |
| | | | | | | | | |
| Db | 61 | PSNRRETOOKSNM | LELRISILL | IOSMLEPVOFL | NSVFANSLVYGASDSN | YDILDKD | EEG | 120 |
| | | | | | | | | |
| Qy | 122 | IQTLMGRLEDSGP | | | | | | 134 |
| | | | | | | | | |
| Db | 121 | IQTLMGRLEDSGP | | | | | | 133 |

RESULT 7
US-11-267-871-162

; Sequence 162, Application US/11267871
; Publication No. US20060094655A1
; Attorney: TROTT & TROTT

```

? GENERAL INFORMATION:
? APPLICANT: Guyon, Thierry
? APPLICANT: Borrelly, Gilles
? APPLICANT: Dirlanti, Lila
? APPLICANT: Vega, Manuel
? TITLE OF INVENTION: MODIFIED GROWTH HORMONES

```

| | | | | |
|---------------------------|--------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 10; | Length 191; |
| Best Local Similarity | -99.2% | Pred. No. 9.3e-63; | | |
| Matches 132; Conservative | 0; | Mismatches 1; | Indels 0; | Gaps 0; |

| | | | |
|----|-----|---|---|
| Qy | 2 | PPTIPLSRFDNAMRARHQLADVDYQEEENAYIPREQKYSPLQNPQTSLSSESIP | 61 |
| | | 1 | PPTIPLSRFDNAMRARHQLADVDYQEEENAYIPREQKYSPLQNPQTSLSSESIP |
| Db | | | 60 |
| Qy | 62 | PSNRRTQOKSNLELRTSLLLIOSWLEPVOFLRSVANSILVYGASPSNNYDILLKDLREG | 121 |
| | | 61 | PSNRRTQOKSNLELRTSLLLIOSWLEPVOFLRSVANSILVYGASPSNNYDILLKDLREG |
| Db | | | 120 |
| Qy | 122 | IQTLMGRLEDGSP | 134 |
| | | 121 | IQTLMGRLEDGSP |
| Db | | | 133 |

RESULT 8
US-11-267-871-163

; Sequence 163, Application US/11267871
; Publication No. US20060094655A1

```

; GENERAL INFORMATION:
; APPLICANT: Guyon, Thierry
; APPLICANT: Borrelly, Gilles
; APPLICANT: Dritantci, Lila

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us-10-714-067-24.rapbm

Page 4

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1  APPALCAT:  Vega, Manuel
2  TITLE OF INVENTION:  MODIFIED GROWTH HORMONES
3  FILE REFERENCE:  17109-015001/925
4  CURRENT APPLICATION NUMBER:  US/11/267,871
5  PRIOR FILING DATE:  2005-11-03
6  PRIOR APPLICATION NUMBER:  60/7106,697
7  PRIOR FILING DATE:  2005-08-08
8  PRIOR APPLICATION NUMBER:  60/625,652
9  PRIOR FILING DATE:  2004-11-04
10 NUMBER OF SEQ ID NOS:  719
11 SOFTWARE:  FastSeq for Windows Version 4.0
12 SEQ ID NO 163
13 LENGTH:  191
14 TYPE:  PRT
15 ORGANISM:  Homo Sapiens
16 US-11-267-871-163

```

| | | | | |
|---------------------------|-------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 10; | Length 191; |
| Best Local Similarity | 99.2% | Pred. No. 9.3e-63; | | |
| Matches 132; Conservative | 0; | Mismatches 1; | Indels 0; | Gaps 0; |

| | | | | |
|----|-----|--|-----|-----|
| Qy | 2 | FPPIPLSRLEADNMLPAHRLHOLAFPTVOEFEEAATIPKQKYSFLONQTSLSFSES | 1PT | 61 |
| Db | 1 | FPPIPLSRLEADNMLPAHRLHOLAFPTVOEFEEAATIPKQKYSFLONQTSLSFSES | 1PT | 60 |
| Qy | 62 | PSNREETQOKSNLELRLRISLLIQSWLEPQVLRISVPANSLVYGASDSNVYDLKDL | EEG | 122 |
| Db | 61 | PSNREETQOKSNLELRLRISLLIQSWLEPQVLRISVPANSLVYGASDSNVYDLKDL | EEG | 120 |
| Qy | 122 | IQTLMGRLEDDGSP | | 134 |
| Db | 121 | IQTLMGRLEDDGSP | | 133 |

```

1  RESULT 9
2  US-11-267-871-164
3  Sequence 164, Application US/11267871
4  Publication No. US20060094655A1
5  GENERAL INFORMATION:
6  APPLICANT: Guyon, Thierry
7  APPLICANT: Borrelli, Gilles
8  APPLICANT: Dittanti, Lila
9  APPLICANT: Vega, Manuel
10 TITLE OF INVENTION: MODIFIED GROWTH HORMONES
11 FILE REFERENCE: 17109-015001/925
12 CURRENT APPLICATION NUMBER: US/11/267,871
13 PRIOR FILING DATE: 2005-11-03
14 PRIOR APPLICATION NUMBER: 60/706,697
15 PRIOR FILING DATE: 2005-08-08
16 PRIOR APPLICATION NUMBER: 60/625,652
17 PRIOR FILING DATE: 2004-11-04
18 NUMBER OF SEQ ID NOS: 719
19 SOFTWARE: FastSeq for Windows Version 4.0
20 SEQ ID NO 164
21 LENGTH: 191
22 TYPE: prt
23 ORGANISM: Homo Sapiens
24 US-11-267-871-164

```

| | | | | |
|---------------------------|--------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 10; | Length 191; |
| Best Local Similarity | 99.2%; | Pred. No. 9.3e-63; | | |
| Matches 132; Conservative | 0; | Mismatches 1; | Indels 0; | Gaps 0; |

QY 2 PPTPLSLRLDNMMLAHRHQLAFTYQEFSEAYLPKQKPSFLQNTQSLSPSSSPT 61

Db 1 PPTPLSLRLDNMMLAHRHQLAFTYQEFSEAYLPKQKPSFLQNTQSLSPSSSPT 60

QY 62 PSNRREETOOKSNELLIRISILLIQSWLEPVQFLRSYFANSLVYGASDSNVYDLKDLLEG 122

Db 61 PSNRREETOOKSNELLIRISILLIQSWLEPVQFLRSYFANSLVYGASDSNVYDLKDLLEG 120

QY 122 IOTLMGRLEDDSP 134

Db 121 IQTLMGRLDGP 133

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US-11-267-871-165
RESULT 10
US-11-267-871-165
Sequence 165, Application US/11267871
Publication No. US20060094655A1
GENERAL INFORMATION:
APPLICANT: Guyon, Thierry
APPLICANT: Borrelli, Gilles
APPLICANT: Dirlanti, Lila
APPLICANT: Vega, Manuel
TITLE OF INVENTION: MODIFIED GROWTH HORMONES
FILE REFERENCE: 17109-015001/925
CURRENT APPLICATION NUMBER: US/11/267,871
CURRENT FILING DATE: 2005-11-03
PRIOR APPLICATION NUMBER: 60/706,697
PRIOR FILING DATE: 2005-08-08
PRIOR APPLICATION NUMBER: 60/625,652
PRIOR FILING DATE: 2004-11-04
NUMBER OF SEQ ID NOS: 719
SOFTWARE: FastSeq for Windows Version 4.0
SEQ ID NO 165
LENGTH: 191
TYPE: prt
ORGANISM: Homo Sapiens
US-11-267-871-165

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| | | | | |
|---------------------------|-------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 10; | Length 191; |
| Best Local Similarity | 99.2% | Pred. No. 9.3e-63; | | |
| Matches 132; Conservative | 0; | Mismatches 1; | Indels 0; | Gaps 0; |

| | | | |
|----|-----|---|-----|
| Qy | 2 | FPPIPLSRIFPDNMLRPHRLHQLAFPTVOEFEEAVIIPKQKYSFLQNPQTLSFSESPT | 61 |
| | | | |
| Db | 1 | FPPIPLSRIFPDNMLRPHRLHQLAFPTVOEFEEAVIIPKQKYSFLQNPQTLSFSESPT | 60 |
| | | | |
| Qy | 62 | PSNRRETOOKSNLELRISILLIQSWLEPVCFRSVPFANSLVYGASDSNVVDLLKDLREG | 121 |
| | | | |
| Db | 61 | PSNRRETOOKSNLELRISILLIQSWLEPVCFRSVPFANSLVYGASDSNVVDLLKDLREG | 120 |
| | | | |
| Qy | 122 | IQTLMGRLENGSP | 134 |
| | | | |
| Db | 121 | IQTLMGRLENGSP | 133 |

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|-----------------------|-----------------|--------------------|-----------|-------------|
| Query Match | 98.5% | Score 670; | DB 10; | Length 191; |
| Best Local Similarity | 99.2%; | Pred. No. 9.3e-63; | | |
| Matches 132; | Conservative 0; | Mismatches 1; | Indels 0; | Gaps 0 |


```
QY      2 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 61
      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
Db      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
QY      62 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
Db      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
QY      122 IOTLMGRLEDDGSP 134
      121 IOTLMGRLEDDGSP 133
Db      121 IOTLMGRLEDDGSP 133

RESULT 12
US-11-267-871-167
; Sequence 167, Application US/11267871
; Publication No. US20060094655A1
; GENERAL INFORMATION:
; APPLICANT: Guyon, Thierry
; APPLICANT: Borrelli, Gilles
; APPLICANT: Dricant, Lila
; APPLICANT: Vega, Manuel
; TITLE OF INVENTION: MODIFIED GROWTH HORMONES
; FILE REFERENCE: 17109-015001/925
; CURRENT APPLICATION NUMBER: US/11/267, 871
; PRIOR FILING DATE: 2005-11-03
; PRIOR APPLICATION NUMBER: 60/706, 697
; PRIOR FILING DATE: 2005-08-08
; PRIOR APPLICATION NUMBER: 60/625, 652
; NUMBER OF SEQ ID NOS: 719
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 167
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo Sapiens
US-11-267-871-167

Query Match      98.5%; Score 670; DB 10; Length 191;
Best Local Similarity 99.2%; Pred. No. 9.3e-63;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY      2 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 61
      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
Db      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
QY      62 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
Db      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
QY      122 IOTLMGRLEDDGSP 134
      121 IOTLMGRLEDDGSP 133
Db      121 IOTLMGRLEDDGSP 133

RESULT 13
US-11-267-871-168
; Sequence 168, Application US/11267871
; Publication No. US20060094655A1
; GENERAL INFORMATION:
; APPLICANT: Guyon, Thierry
; APPLICANT: Borrelli, Gilles
; APPLICANT: Dricant, Lila
; APPLICANT: Vega, Manuel
; TITLE OF INVENTION: MODIFIED GROWTH HORMONES
; FILE REFERENCE: 17109-015001/925
; CURRENT APPLICATION NUMBER: US/11/267, 871
; PRIOR FILING DATE: 2005-11-03
; PRIOR APPLICATION NUMBER: 60/706, 697
; PRIOR FILING DATE: 2005-08-08
; PRIOR APPLICATION NUMBER: 60/625, 652
; PRIOR FILING DATE: 2004-11-04
```

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; NUMBER OF SEQ ID NOS: 719
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 168
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo Sapiens
US-11-267-871-168

Query Match      98.5%; Score 670; DB 10; Length 191;
Best Local Similarity 99.2%; Pred. No. 9.3e-63;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY      2 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 61
      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
Db      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
QY      62 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
Db      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
QY      122 IOTLMGRLEDDGSP 134
      121 IOTLMGRLEDDGSP 133
Db      121 IOTLMGRLEDDGSP 133

RESULT 14
US-11-267-871-169
; Sequence 169, Application US/11267871
; Publication No. US20060094655A1
; GENERAL INFORMATION:
; APPLICANT: Guyon, Thierry
; APPLICANT: Borrelli, Gilles
; APPLICANT: Dricant, Lila
; APPLICANT: Vega, Manuel
; TITLE OF INVENTION: MODIFIED GROWTH HORMONES
; FILE REFERENCE: 17109-015001/925
; CURRENT APPLICATION NUMBER: US/11/267, 871
; PRIOR FILING DATE: 2005-11-03
; PRIOR APPLICATION NUMBER: 60/706, 697
; PRIOR FILING DATE: 2005-08-08
; PRIOR APPLICATION NUMBER: 60/625, 652
; NUMBER OF SEQ ID NOS: 719
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 169
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo Sapiens
US-11-267-871-169

Query Match      98.5%; Score 670; DB 10; Length 191;
Best Local Similarity 99.2%; Pred. No. 9.3e-63;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY      2 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 61
      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
Db      1 PPTPLSLRFPDNLRAHRLHQLAFDPTQOEFEAYIPKEOKYSFLONPOTSLSFSES1PT 60
QY      62 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 121
      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
Db      61 PSNREETOQKSNLELRISILLIQSWLEPVQFLRSVFANSIVYGASDSNVYDLKDLLEG 120
QY      122 IOTLMGRLEDDGSP 134
      121 IOTLMGRLEDDGSP 133
Db      121 IOTLMGRLEDDGSP 133

RESULT 15
US-11-267-871-170
; Sequence 170, Application US/11267871
; Publication No. US20060094655A1
; GENERAL INFORMATION:
; APPLICANT: Guyon, Thierry
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3 APPLICANT: Borrelli, Gilles
4 APPLICANT: Dittanti, Lila
5 APPLICANT: Vega, Manuel
6 TITLE OF INVENTION: MODIFIED GROWTH HORMONES
7 FILE REFERENCE: 17109-015001/925
8 CURRENT APPLICATION NUMBER: US/11/267,871
9 CURRENT FILING DATE: 2005-11-03
10 PRIOR APPLICATION NUMBER: 60/706,697
11 PRIOR FILING DATE: 2005-08-08
12 PRIOR APPLICATION NUMBER: 60/625,652
13 PRIOR FILING DATE: 2004-11-04
14 NUMBER OF SEQ ID NOS: 719
15 SOFTWARE: FastSeq for Windows Version 4.0
16 SEQ ID NO 170
17 LENGTH: 191
18 TYPE: PRT
19 ORGANISM: Homo Sapiens
20 US-11-267-871-170
```

```
Query Match          98.5%; Score 670; DB 10; Length 191;
Best Local Similarity 99.2%; Pred. No. 9.3e-63;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
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```
QY      2 PPTPLPSRLFDNAMLRAHRLHQLAFTTYQEFEEAYIPKEOKYSPFLQNPOTSLSFSISPT 61
        |||||||
DB      1 PPTPLPSRLFDNAMLRAHRLHQLAFTTYQEFEEAYIPKEOKYSPFLQNPOTSLSFSISPT 60
        |||||||
QY      62 PSNRRETOOKSNLELRLISILLIOSWLEPYQFLRSVFNANSLVYGASDSNYYDILKDLLEG 121
        |||||||
DB      61 PSNRRETOOKSNLELRLISILLIOSWLEPVQFLRSVFANSLVYGASDSNYYDILKDLLEG 120
        |||||||
QY      122 IOTLMGRLEDDGSP 134
        |||||||
DB      121 IOTLMGRLEDDGSP 133
        |||||||
```

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Search completed: May 11, 2006, 12:06:36
Job time : 29 secs
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